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How do Portuguese novice physiotherapists practice patient education?

A video elicitation interview study in musculoskeletal clinical practice

Dissertação de Mestrado em Fisioterapia
Relatório de Projeto de Investigação

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Relatório de Investigação apresentado para cumprimento dos requisitos necessários à obtenção do grau de Mestre em Fisioterapia, área de especialização em Fisioterapia em Condições Músculo-Esqueléticas, realizada sob a orientação científica da Professora Doutora Carmen Caeiro e coorientação da Professora Doutora Roma Forbes

Declaro que este Relatório de Investigação é o resultado da minha investigação pessoal e independente. O seu conteúdo é original e todas as fontes consultadas estão devidamente mencionadas no texto, nas notas e na bibliografia.

A candidata,

_____

Isabel Teixeira Fernandes

Setúbal, ... de ..... de .....

Declaro que este Relatório de Investigação se encontra em condições de ser apresentado a provas públicas.

A orientadora,

_____

Professora Doutora Carmen Caeiro

Setúbal, ... de ..... de .....

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RESUMO

Como é que os fisioterapeutas recém-licenciados portugueses praticam a educação do utente? Um estudo de entrevistas com elicitação por vídeo em prática clínica músculo-esquelética

Isabel Fernandes, Roma Forbes e Carmen Caeiro

Introdução: Entre os adultos em idade ativa, as condições músculo-esqueléticas são a principal causa de incapacidade. A educação centrada na pessoa é recomendada para restaurar e manter a função, melhorar a participação, e fornecer um plano de gestão da condição. Fisioterapeutas recém-licenciados reportam maiores dificuldades e barreiras, em comparação com fisioterapeutas experientes na educação do utente. Contudo, pouco se sabe sobre a forma como implementam a educação enquanto modalidade terapêutica.

Objetivos: Este estudo teve como objetivo explorar os modelos que estão na base da prática de educação, enquanto modalidade terapêutica implementada por fisioterapeutas recém-licenciados portugueses, no contexto músculo-esquelético.

Metodologia: Foi realizado um estudo etnográfico, que integrou observações de vídeos de sessões de tratamento entre fisioterapeutas recém-licenciados e utentes com condições musculoesqueléticas, com foco na educação do utente, juntamente com entrevistas com elicitação por vídeo. Foi desenvolvido e aplicado um guião de observação e um guião de entrevistas semiestruturadas para a recolha de dados. A análise dos dados foi realizada através de uma análise de conteúdo dedutiva e um esquema de codificação. Várias estratégias foram implementadas para garantir o rigor da análise, incluindo *member check*, triangulação dos investigadores, um diário reflexivo e um *audit trail*.

Resultados: Oito participantes (≤ 5 anos de experiência profissional) foram observados e, posteriormente, entrevistados. As práticas dos participantes foram categorizadas em três tipos: tipo 1 – atividade-passividade; tipo 2 – orientação-cooperação; e tipo 3 – participação mútua. A maioria dos participantes demonstrou características de mais do que um tipo de prática. No entanto, foi possível identificar um tipo dominante para cada participante, que foi consistente entre vídeos e entrevistas.

Conclusão: Este estudo sugere que a prática de educação, enquanto modalidade terapêutica, aplicada por fisioterapeutas recém-licenciados portugueses, na intervenção com utentes com condições músculo-esqueléticas, tende a situar-se entre os tipos atividade-passividade e participação mútua. Os participantes demonstraram dificuldades na participação mútua, com mais da metade categorizados, principalmente, como envolvidos em práticas de educação centradas no fisioterapeuta.

Palavras-chave: Educação do utente, educação centrada na pessoa, fisioterapeutas recém-licenciados, investigação qualitativa, etnografia, entrevistas com elicitação por vídeo

ABSTRACT

How do Portuguese novice physiotherapists practice patient education? A video elicitation interview study in musculoskeletal clinical practice

Isabel Fernandes, Roma Forbes e Carmen Caeiro

Background: Among occupationally active adults, musculoskeletal disorders are the leading cause of disability. Person-centred education is recommended to restore and maintain function, improve participation, and provide a management plan. Novice physiotherapists report greater difficulties and face more barriers compared to experienced physiotherapists in delivering patient education. However, little is known about how they practice patient education.

Objectives: This study aimed to explore the models underpinning the practices of Portuguese novice physiotherapists regarding patient education in the musculoskeletal clinical setting.

Methods: An ethnographic study was conducted, integrating observations of video recordings of treatment sessions between novice physiotherapists and patients with musculoskeletal conditions, with a focus on patient education, along with video elicitation interviews. An observation guide and a semi-structured interview schedule were developed and applied for data collection. Data analysis was performed using deductive content analysis and a coding scheme. Several strategies were implemented to ensure the rigour of the analysis, including member check, investigator triangulation, a reflexive diary and an audit trail.

Results: Eight participants (≤ 5 years of professional experience) were observed and subsequently interviewed. The participants' practices were categorised into three types: type 1 – activity-passivity; type 2 – guidance-cooperation; and, type 3 – mutual participation. Most participants demonstrated characteristics of more than one practice type. Nevertheless, a dominant type could be identified for each participant, which was generally consistent across both videos and interviews.

Conclusion: The current study suggests that Portuguese novice physiotherapists' practice of patient education tends to fall between the activity-passivity and mutual participation types. Participants faced challenges in achieving mutual participation, with more than half primarily categorised as engaging in physiotherapist-centred education practices.

Keywords: Patient education, person-centred education, novice physiotherapists, qualitative research, ethnography, video elicitation interviews

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ABBREVIATION LIST

CE-IPS – *Comissão de Ética do Instituto Politécnico de Setúbal* (Ethics Commission of Setúbal Polytechnic Institute)

ENSP-UNL – *Escola Nacional de Saúde Pública da Universidade Nova de Lisboa* (NOVA National School of Public Health)

ESS-IPS – *Escola Superior de Saúde do Instituto Politécnico de Setúbal* (Setúbal Polytechnic Institute - School of Healthcare)

FCM/NMS – *Faculdade de Ciências Médicas*/ Nova Medical School

HCP – Healthcare professional

HCPs- Healthcare professionals

PCC – Person-centred care

1. Introduction

1.1. The role of patient education in physiotherapy

Trede (2000) proposed that patient education should be seen as an important part of effective physiotherapy management and that it is much more complex than the application of technical knowledge and method. This recognises that the process of patient education is more substantial than a simple transfer of information. It is rather a systematic, sequential and planned process, consisting of both teaching and learning (Bastable, 2016). Physiotherapists as part of the wider health profession are faced with an increasingly aged population, many of whom are living with and managing chronic health conditions (Rudnicka et al., 2020). As a result, patient education is seen as an essential component of successful rehabilitation, emerging from a complex interpersonal interaction (Harman et al., 2011; Wittink & Oosterhaven, 2018).

Persistent musculoskeletal pain affects 20% of adults worldwide and is considered an urgent global public health concern (Hutting et al., 2019; Watson et al., 2019). In addition to the negative impact on individuals' quality of life, there is a large societal financial burden associated (Hutting et al., 2019; Watson et al., 2019). The most common musculoskeletal disorders include spine-related neck and back problems, osteoarthritis and rheumatoid arthritis (Hutting et al., 2019; Souza et al., 2020). Among occupationally active adults, musculoskeletal disorders are the main cause of disability and are often work related, presenting as a considerable problem in the workplace – they lead to human suffering, lost time due to sickness absence, and reduced work productivity (presenteeism) (Hutting et al., 2019; Souza et al., 2020). Moreover, many of these musculoskeletal disorders are often resistant to some of the current treatments (Hutting et al., 2019; Souza et al., 2020). A person-centred education that focuses on self-management and a healthy lifestyle is important to restore and maintain function, to improve participation in the long term and to provide a management plan, instead of a cure (Hutting et al., 2019; Souza et al., 2020).

In practice, physiotherapists often spend longer time with patients than other health professionals and, thus, are considered in a better position to promote individualised

patient education (Forbes, Mandrusiak, Russell, et al., 2017; Ross & Haidet, 2011). Specifically in the musculoskeletal context, patient education is consistently recommended as a first line treatment in the management of these conditions (Lin et al., 2020; Wallis et al., 2021; Watson et al., 2019). It plays a crucial work in supporting patients to plan and implement healthcare strategies by providing information about the condition and prognosis, addressing psychosocial aspects, promoting self-management, actively sharing decision-making and helping them navigate the plethora of health information that is increasingly accessible and complex (Bannuru et al., 2019; Hoving et al., 2010; Koes et al., 2010; Lin et al., 2020; Wallis et al., 2021; Watson et al., 2019). Therefore, there has been an increasing emphasis on the role of physiotherapists as educators (Forbes, 2017b). This role has been validated by physiotherapy research, which supports the view that targeted patient education interventions can improve outcomes related to pain and disability in individuals with chronic musculoskeletal pain conditions (Forbes, 2017b; Louw et al., 2011). According to previous research, people with persistent musculoskeletal pain frequently believe that pain is a sign of tissue damage or structural abnormality, and that exercise can be harmful (Leake et al., 2021; Smith et al., 2018; Toye & Barker, 2012). Educational interventions that aim to address these beliefs have demonstrated to reduce the increased risk of poor outcomes, facilitate the ability to cope and promote clinically significant results in kinesiophobia and pain catastrophising (Leake et al., 2021; Watson et al., 2019).

Several studies have highlighted challenges and barriers in implementing patient education in the context of physiotherapy practice (Cheng et al., 2016; Forbes et al., 2018; Gahimer & Domholdt, 1996; Roussel & Frenay, 2019; Sluijs, 1991; Wijma et al., 2017). One key challenge of implementing patient education as a therapeutic modality in physiotherapy is related to patient characteristics, mainly at the level of attitude and expectations towards physiotherapy (Cheng et al., 2016; Forbes et al., 2018; Forbes, Mandrusiak, Russell, et al., 2017; Harman et al., 2011; Hutting et al., 2022b, 2022a; Wallis et al., 2021; Wijma et al., 2017; World Health Organization, 1998). On the other hand, existing research suggests that patient education is primarily healthcare professional (HCP) centred or didactic in nature and is often not individualised to the patient (Forbes et al., 2017; Trede, 2000). While education is

considered one of the key roles of physiotherapists, it is recognised that providing optimal education for patients may be particularly challenging in private practice settings, where there is pressure to provide the best care to a steady flow of patients with a large spectrum of clinical problems within a limited time. Private practitioners, thus, may face the challenge of providing effective education to patients within a practice environment that may not be ideally suited to education (Harman et al., 2011).

1.2. Patient education in person-centred care

Patient education is considered an integral component of effective patient care inherent to the person-centred care (PCC) model and is highly valued by physiotherapists and patients (Burckhardt, 2005; Cheng et al., 2016; Cooper et al., 2008; Forbes et al., 2018; Harman et al., 2011; Hoving et al., 2010; Roussel & Frenay, 2023; Wijma et al., 2017). Patient education is defined as "a planned learning experience using a combination of methods such as teaching, counselling and behaviour modification techniques which influence patients' knowledge and health behaviour" (Bartlett, 1985, p. 323-324). It has an historic and highly valued place in healthcare (Hoving et al., 2010) and seems to be critical to meet future healthcare needs (Forbes, 2017b; Santana et al., 2018; World Health Organization, 2004). This is particularly relevant given the shift in healthcare focus from a disease-oriented to a health-oriented approach (Heikkinen, 2000; Reuben & Tinetti, 2012) and the increasing need to manage complex patient populations (Forbes, 2017b). These contemporary changes and pressures on healthcare professionals (HCPs) suggest that patient education is, and will be, an increasingly important and demanding area of future healthcare across all health professions (World Health Organization, 2004). Developments in society and health science and, more recently, the use of social media in patient education have placed a demand on educators to keep up to date with evidence-based medicine and the use of information technology (Svavarsdóttir et al., 2015).

PCC is recognised as a key competency of practice in physiotherapy across different countries and regions (American Physical Therapy Association, 2020; Vital

et al., 2020; World Confederation for Physical Therapy, 2011). Previous research has emphasised that PCC improves health outcomes and quality of life, and that it is critical in addressing racial, ethnic, and socioeconomic differences in healthcare and health outcomes (Wittink & Oosterhaven, 2018). Conceptually, PCC is a model in which physiotherapists are encouraged to partner with patients to co-design and deliver personalised care that provides patients with the high-quality care they need and improve healthcare system efficiency and effectiveness (Santana et al., 2018).

The PCC model is universally viewed as underpinning best patient education practice as it views teaching and guiding patients as being more effective than “doing” for them (Edwards et al., 2004; Forbes, 2017b). In contrast to traditional models of education that focus on simple information provision, compliance and dependence, a person-centred approach to patient education encourages autonomy through understanding the patient’s educational needs (Skelton, 2001 as cited in Forbes, 2017b). This approach is also suggested to allow the patient to set their own goals and learning needs to make informed choices regarding their care (Forbes, 2017b). Once regarded as the passive recipients of medical care, patients are increasingly viewed as active (and potentially critical) "consumers" entitled to certain standards of service. These include the right to full information, to be treated with respect and to participate actively in treatment decision-making regarding their treatment goals, options and changes related to healthcare, fostering collaboration between patients and physiotherapists (Edwards et al., 2004; Gold & McClung, 2006; Hoffmann & Worrall, 2004; Hoving et al., 2010; Kaplan et al., 1996; Melin et al., 2021; Schrieber & Colley, 2004; Syx, 2008; Vennedey et al., 2020; Wijma et al., 2017; World Health Organization, 1998). Nowadays, providing care that is respectful of and responsive to individual patient preferences, needs and values, as well as ensuring that patient values guide all clinical decisions seem to be priority. Consequently, recommendations to patient education have shifted from just a transfer of knowledge from the physiotherapist to the patient, to the co-creation of knowledge that involves both in a collaborative model of practice (Edwards et al., 2004; Hoving et al., 2010; Melin et al., 2021; Syx, 2008; Vennedey et al., 2020; Wijma et al., 2017; World Health Organization, 1998).

Various teaching strategies and delivery methods for patient education are discussed in the literature, with one-to-one verbal communication being the most used method in physiotherapy (Forbes, 2017b). Previous research suggests that the methods should be patient specific, involving multiple teaching strategies while being sensitive to cultural issues (Lin et al., 2020; Wallis et al., 2021; Watson et al., 2019). Despite this, the available evidence indicates that patient education is ordinarily unplanned, spontaneous and embedded informally within wider care by HCPs (Dunn & Milheim, 2016; Gregor, 2001; Hult et al., 2009), including physiotherapists (Gahimer & Domholdt, 1996; Rindflesch, 2009; Snook et al., 2023). This suggests that patient education in practice may be notably different to how it is outlined within definitions or theoretical interpretations of the term (Forbes, 2017b). Several authors have detailed the activities and actions required by HCPs to achieve person-centred education. These involve assessing the educational needs of patients, including their perceptions and concerns (Bergh et al., 2014; Ndosi et al., 2016) and facilitating an environment that is conducive for patients to express their needs (Forbes, 2017b). Redman (2004) specifies that including the patients learning needs into the design of the patient education session is a key feature in effective person-centred education as it more accurately reflects their experiences and allows content to be tailored to their needs. Persson & Friberg (2009) further emphasise that person-centred communication skills and pedagogical awareness, as well as an ability to be attentive to patients' needs in an empowering way are required for effective person-centred education. Some authors also outline the need for HCPs to evaluate the outcomes of the educational intervention to ensure that required changes in knowledge, skill or behaviour have occurred (Falvo, 2011; Forbes, 2017b; Kripalani et al., 2007).

From the patient perspective, the literature indicates that patients value educational content that is focused on their problems, compatible with their reality and perceptions, and meaningful to them, with explanations that make sense and help them preserve a sense of control of their lives (Bernhardsson et al., 2017; Caeiro et al., 2022; Kidd et al., 2011; Trede, 2000). Patients seek clear explanations and to be actively involved in decision-making regarding their care (Bosveld et al., 2024; Caeiro et al., 2022; Cooper et al., 2008; Grenfell & Soundy, 2022; Svavarsdóttir et

al., 2015). However, research shows that not all patients prefer an active role in healthcare decision-making. There are several reasons why some patients may prefer to leave decisions to HCPs such as difficulties to understand medical terminology and complex health information, feeling overwhelmed by the amount of information received, being more comfortable with a paternalistic model of care, anxiety about making the “wrong” choice, a lack of encouragement from HCPs, among many other possible explanations for this (Levinson et al., 2005).

1.3. Models of therapeutic relationship between physiotherapists and patients

Patient education within a PCC model involves fostering a process of interaction and collaboration between physiotherapists and patients (Harman et al., 2011; Wittink & Oosterhaven, 2018). To analyse the interactions between HCPs, including physiotherapists, and patients, a common criterion for evaluating person-centredness during patient education has been identified: the distribution of power between the HCP and the patient (Roussel & Frenay, 2023). PCC has replaced a one-sided, HCP-dominated relationship in which the exercise of power distorts the decision-making process for both parties (Kaba & Sooriakumaran, 2007). This model requires an alliance that must consider not only the application of technical knowledge, but also the therapeutic relationship between patient and physiotherapist. In physiotherapy, the therapeutic relationship is integrated into various practice standards, highlighting its importance in shaping competent care (Miciak et al., 2018b, 2018a) and influencing physiotherapists’ approach to patient education.

In their seminal work, Szasz & Hollender (1956) suggest three models of the relationship between HCPs and patients: 1 – activity-passivity; 2 – guidance-cooperation and 3 – mutual participation. Later, Botelho (1992) added a fourth model: 4 –autonomism. These models have significantly influenced research on therapeutic relationship in healthcare. The model of activity-passivity is the oldest conceptual model. Psychologically, it is not an interaction, because it is based on the effect of one person on another in such a way and under such circumstances that the person acted upon is unable to contribute actively or is considered to be

inanimate. This frame of reference (in which the HCP does something to the patient) underlies the application of some of the outstanding advances of modern medicine (e.g., anesthesia and surgery, antibiotics, etc.). The HCP is active, and the patient is passive. This orientation has originated in – and seems to be appropriate for – the treatment of emergencies (e.g., for the patient who is severely injured, bleeding, delirious or in coma) (Szasz & Hollender, 1956).

The model of guidance-cooperation underlies much of medical practice. It is employed in situations which are less acute than those previously mentioned (e.g., acute infections). Although the patient is ill, he is conscious and has feelings and aspirations of his own. Since he suffers from pain, anxiety, and other distressing symptoms, he seeks help and is ready and willing to cooperate. When he turns to a HCP, he places the latter (even if only in some limited ways) in a position of power, because the HCP possesses knowledge of his bodily processes which he does not have (Szasz & Hollender, 1956). In this model both, HCP and patient, are “active” in that they contribute to the relationship and what ensues from it. The main difference between the two participants pertains to power, and to its actual or potential use. The more powerful of the two will speak of guidance or leadership and will expect cooperation of the other member of the pair. The patient is expected to look up to and follow the HCP, not to question, argue or disagree with the instructions received (Szasz & Hollender, 1956).

Philosophically, the model of mutual participation is predicated on the postulate that equality among human beings is desirable. It is crucial to this type of interaction that both the HCP and the patient share approximately equal power, are mutually interdependent and engage in activities that are satisfying for both parties. This model is favoured by patients who, for various reasons, want to play an active role in their treatment (Szasz & Hollender, 1956). This may be realistic and necessary in the management of most chronic illnesses. In this context, the patient’s own experiences provide reliable and important clues for therapy. Moreover, the treatment program itself is principally carried out by the patient, with the HCP acting as a partner to help the patient helping themselves. In an evolutionary sense, the pattern of mutual participation is more highly developed than the other two models of HCP-patient relationship. It requires a more complex psychological and social

organisation from both participants (Szasz & Hollender, 1956). This model, therefore, provides the patient with a greater degree of responsibility and is characterised by a high degree of empathy, including elements often associated with partnership, as well as the imparting of expert medical advice (Kaba & Sooriakumaran, 2007).

The model of autonomism describes the relationship level at which patients exert greater control over and assume more responsibility than the HCP for some or all aspects of their healthcare (Botelho, 1992). As the relationship becomes more person-centred, the patient tends to become more autonomous, exerts more control during the interaction and assumes more responsibility for their own healthcare. The patient determines the course of the healthcare, with the HCP outlining relevant information to the patient and respecting their preferences and choices (Botelho, 1992). The extent to which the patient seeks to be autonomous in these relationships should influence the relationship level at which the HCP engages with the patient. A patient may be uncertain as to what level of autonomy to exert in the HCP-patient relationship and, therefore, may change the relationship level during the HCP-patient interaction (Botelho, 1992). HCPs may decide whether to use their authority to encourage patients to take greater control and responsibility for their health. Botelho (1992) mentions that the HCP may need to alternate between engaging with the patient at the level of paternalism and using empowering strategies so that eventually the patient can relate to the HCP at the level of egalitarianism or autonomism.

The issue of agreement underlying decision-making seems to be important because it directly impacts the four models of the HCP-patient relationship. In the first two models, agreement between HCP and patient is taken for granted. The third model differs in that the HCP does not profess to know exactly what is best for the patient. Rather, the collaborative search for this becomes the essence of the therapeutic interaction. The patient's own experiences furnish indispensable information for eventual agreement, under otherwise favourable circumstances, as to what health might be for them (Szasz & Hollender, 1956). The fourth model relies on the patient's right for self-determination and autonomy, placing decision-making control mostly in the hands of the patient. Therefore, the activity-passivity and guidance-cooperation

models are entirely paternalistic and, thus, predominantly HCP-centred. The latter, mutual participation and autonomism, support a therapeutic relationship that aligns more closely with the principles of PCC (Kaba & Sooriakumaran, 2007).

More recently (Roussel & Frenay, 2023) proposed an operationalisation of these models through the identification of specific types and subtypes of therapeutic relationship. These authors carried out a qualitative study based on interviews with twenty-six HCPs (thirteen nurses; seven medical doctors; three physiotherapists; two dietitians; one pharmacist) and identified four types of therapeutic relationship that are fully aligned with the aforementioned models. At one extreme (type 1 – activity-passivity), the power is held by the HCP who tells the patient what to do and at the other end (type 4 – autonomism), the power is left to the patient (Roussel & Frenay, 2023).

1.4. Challenges in the therapeutic relationship and person-centred education for novice physiotherapists

Previous research has suggested that patient education practices may differ between experienced and novice physiotherapists. Novice physiotherapists have reported greater difficulties and barriers compared to more experienced physiotherapists (Forbes, Mandrusiak, Smith, et al., 2017; Svavarsdóttir et al., 2015). Early studies have reported that novice physiotherapists place less importance on patient education and communication than on other clinical skills and often fail to apply educational approaches that promote patient responsibility and engagement in the decision-making (Jensen et al., 1990). Other studies carried out in Australia, Iceland and Norway corroborate these results showing that novice physiotherapists report lower use of person-centred techniques and recognise difficulties in prioritising and individualising educational content to the patient (Forbes, Mandrusiak, Smith, et al., 2017; Svavarsdóttir et al., 2015). It seems that the same is happening in the Portuguese context – while Portuguese novice physiotherapists seem to possess high self-efficacy and perceived preparedness for most aspects of patient education, they perceive barriers to patient education practice such as patients' lack of openness to receive education, poor attitudes

towards physiotherapy, previous experiences and personal characteristics (Santos et al., 2022). According to Santos and colleagues (2022), there were also barriers from the physiotherapists themselves, such as feeling unprepared to provide patient education, particularly in complex situations involving persistent pain, as well as limitations in communication skills required to effectively manage the therapeutic relationship.

For the new graduate, the initial years of practice are times for the continued development of professional identity, knowledge base, clinical reasoning, and decision-making skills (Hayward et al., 2013). This seems to relate to the gap between theory (research) and practice – in other words, the perceived inconsistencies between the theory learned in the academic context and what happens in clinical practice (Roskell et al., 1998). These characteristics make new graduates a special population, with characteristics and needs specific to the transition phase they are facing.

The findings from the study of Forbes, Mandrusiak, Smith, et al. (2017) suggest that Australian novice physiotherapists may less frequently explore patients' ideas, perceptions and may not address patient concerns and educational activities, which are highlighted as integral to person-centred education within patient education literature. Thus, they seem to have less ability to recognise when a patient is ready to receive information, to be sensitive to the patients' interests and learning needs, to adjust the education to each patient's needs and the context of the situation, and to share power with the patient (Forbes, Mandrusiak, Smith, et al., 2017).

Two recent studies by Pombares and colleagues (2023) and Santos and colleagues (2022) with Portuguese novice physiotherapists concluded that, although patient education is perceived as a fundamental component of clinical practice, the perceived preparedness to deliver it seems to be low. Some barriers to deliver patient education were identified in interviews with Portuguese novice physiotherapists, such as the lack of experience, difficulty in effective communication, the pressure from work context and the receptiveness of patients (Pombares and colleagues, 2023). Nevertheless, little is known about how Portuguese novice physiotherapists practice patient education.

This study aimed to explore the practice of Portuguese novice physiotherapists regarding patient education in the musculoskeletal clinical setting. More specifically it aimed to explore the models of therapeutic relationship that underpin this practice, based on the models proposed by Szasz & Hollender (1956) and Botelho (1992), which were later operationalised by Roussel & Frenay (2023). The knowledge generated by this study may contribute to the development of strategies aimed at engaging physiotherapists in effective patient education practice.

2. Methods

2.1. Study context

This study was carried out in Portugal, where at the time 22 institutions offered undergraduate physiotherapy courses. In Portugal, undergraduate education is the responsibility of higher education institutions, authorised by the government. Each program has a four-year length, and the flexibility to establish the graduate profile, the pedagogical approaches and the time spent to teach each subject.

In order to enter professional practice, Portuguese physiotherapists must register in the Order of Physiotherapists/Physiotherapy Board (Ordem dos Fisioterapeutas). Upon completing this process, physiotherapists can start working autonomously. There is no need for initial accompaniment or supervision by a more experienced colleague (Vital et al., 2020).

More than half of physiotherapists in Portugal work in rehabilitation centres or clinics (outsourced physiotherapy service) or in private practice (Gabinete de Estudos e Planeamento, 2023). Outsourced physiotherapy includes hospitals, health centres, rehabilitation centres and other facilities, while private practice may include private offices or private hospitals (Vital et al., 2020).

In the context of this study, clinical practice is viewed as a setting that enables the observation and analysis of one-on-one communication between physiotherapist and patient. It is also a challenging environment, where time and financial pressures can hinder the quality of communication that physiotherapists can achieve with their patients (Hiller et al., 2015).

2.2. Study design

Considering this study's aim, ethnography was considered the most appropriate methodological approach. Ethnography is a type of qualitative research that involves an understanding of communities, groups or settings through detailed investigation of the cultural norms, beliefs, and typical behaviours by collecting, primarily, observational and interview data (Creswell, 2009; Ritchie et al., 2014). This ethnographic study followed an observational approach of video recordings of the

interaction between patients and physiotherapists concerning the education of patients, as well as video elicitation interviews.

Qualitative research has been defined as the investigation of phenomena, typically with in-depth approach, through the collection of rich narrative materials using a flexible research design (Braun & Clarke, 2013; Guest et al., 2012; Korstjens & Moser, 2017; Moser & Korstjens, 2017a; Ritchie et al., 2014). Qualitative research aims to provide insights and understanding of real-world problems, studying phenomena in the natural contexts of individuals or groups and focusing on the "how" and "why" (Braun & Clarke, 2013; Guest et al., 2012; Korstjens & Moser, 2017; Moser & Korstjens, 2017a; Ritchie et al., 2014). Qualitative researchers try to gain a deeper understanding of people's experiences, perceptions, behaviour and processes, as well as the meanings they attach to them (Braun & Clarke, 2013; Guest et al., 2012; Korstjens & Moser, 2017; Moser & Korstjens, 2017a; Ritchie et al., 2014). In the context of healthcare, qualitative research may offer insights into aspects of clinical practice not yet investigated and enable researchers to study how HCPs translate knowledge into practice (Ng et al., 2019).

This study's protocol was submitted to the Ethics Commission of Setúbal Polytechnic Institute (CE-IPS), and it was approved under code CE-IPS nº PI 99-03-2024 (annex 1).

2.3. Participants

The participants for this study were Portuguese novice physiotherapists (five years or less of professional practice) (Jensen et al., 1990, 2000), who completed their four-year physiotherapy program in Portugal working in the clinical context with, mainly, patients with musculoskeletal conditions. Physiotherapists that did not graduate in Portugal, those that were working abroad and those who did not work with patients with musculoskeletal conditions were excluded.

Initially, this study focused on new graduates from the Health School of the Polytechnic Institute of Setúbal, one of the 22 institutions that provided the undergraduate physiotherapy courses. However, it was later broadened to new

graduates from other Portuguese institutions, as described in the following paragraphs.

According to previous research, the initial target was to recruit nine participants (Asan & Montague, 2014; Golembiewski et al., 2023; Henry et al., 2020; Henry & Fetters, 2012; Hiller et al., 2015; Parry et al., 2016; Pedersen et al., 2022; Thackray & Roberts, 2017). Participant recruitment used purposeful sampling to include only individuals with characteristics of interest (Henry & Fetters, 2012). As part of the recruitment process, the coordinator of the physiotherapy undergraduate from the Health School of the Polytechnic Institute of Setúbal was contacted via e-mail. This e-mail included the invitations and attached information sheet for the physiotherapists (appendix A) that was forwarded to the physiotherapists who have graduated in the last five years. Graduates were informed that if they were interested in obtaining further information and possibly taking part in the study, they should contact the investigator in charge directly (via the e-mail address provided in the information sheet).

Since there was an insufficient number of candidates coming forward after the aforementioned procedure, the sample was broadened, and a publication was made on the Musculoskeletal Physiotherapy interest group's (Grupo de interesse em Fisioterapia Músculo-Esquelética) social network and shared on the lead investigator's as well. These publications included a Google forms link that explained briefly the study, the inclusion and exclusion criteria as well as the procedures and contacts to obtain more information. Following the contact of potential interested participants, the invitation and the information sheet for the physiotherapists (appendix A) were sent to their e-mail and any questions were clarified via e-mail or social networks.

When interest in participating was confirmed, a consent form (appendix B) was sent to be filled by the physiotherapist. The consent form was developed using the Microsoft Forms Platform. The link for completion was sent to each physiotherapist, after reading the information sheet and contacting the lead investigator.

Each physiotherapist was asked to select and invite a patient to record a physiotherapy session with and, as a result, participate in the study. The patient

recruited should be undergoing treatment for a clinical condition where education is recommended by guidelines as a primary treatment option, such as low back pain, neck pain, osteoarthritis or other persistent pain musculoskeletal conditions. An information sheet to the patient (appendix C) was given by the physiotherapist to the patient, allowing him/her time to read and ask questions to either the physiotherapist or the lead investigator. Afterwards a day was agreed between the physiotherapist and the patient to record the physiotherapy session, according to the treatment plan (and without interfering with it). The patient was required to give consent to being video-recorded and to participate in the study, by completing the patient consent form, which was sent via link by the physiotherapist (appendix D). The lead investigator was available for any questions.

2.4. Data collection

Two data collection methods were used: non-participant observation (video-based observation) and semi-structed interviews (video elicitation interviews). According to the projected number of participants to be recruited (reported in 2.3.), a minimum of nine observations and nine subsequent interviews were sought (Jewitt, 2012; Thackray & Roberts, 2017).

There is no universal ‘right amount’ of data to collect, rather the amount of data collected needs to be determined by the research approach, aim and research questions, as well as by pragmatic questions of time and resources (Braun & Clarke, 2013; Guest et al., 2012; Ritchie et al., 2014). Additionally, despite the conflicting evidence about the concept, data saturation was also considered as a possible criterion to discontinue data collection. However, it is important to note that trying to predict the point in the data at which saturation is reached cannot be directly linked to the number of observations or interviews, as the meaning of any theme derives from the data set, and the interpretive process (Braun & Clarke, 2019).

The following paragraphs contextualise both methods used for data collection in this study.

2.4.1. Video-based observation

Physiotherapists were asked to record a session with a patient in which there were patient educational practices shown. The video recording and the camera angle were made with the physiotherapist's device of choice, as long as it had good quality, and then shared via OneDrive (Outlook) or Drive (Gmail) to the e-mail provided in the information sheet. The video was then downloaded to a password protected folder in the lead investigator's computer. Physiotherapists were recommended to delete the recording from OneDrive or Drive five days after it being shared.

Video recordings have been recognised to be an effective method to evaluate in situ interactions in clinical practice (Asan & Montague, 2014; Pedersen et al., 2022). Over the last years, there has been an increasing use of video recordings (Pedersen et al., 2022). These offer several advantages over other observational methods like direct researcher observation, including a comprehensive and accurate record of the encounter, capture of non-verbal communication and the ability for repeated review by multiple observers to increase accuracy and validity of findings (Asan & Montague, 2014; Golembiewski et al., 2023; Henry et al., 2020). Furthermore, existing research indicates that well-executed video-based data collection activities pose little disruption to the visit itself, being even preferred over third-party observation, since it limits the Hawthorne effect (which is the possibility of altering the behaviour of participants), as video cameras have been shown to influence participant behaviour far less than a human observer. Additionally, video data might improve ecological validity, since it gives more complete (and visual) information about the real environment rather than traditional observers' observation notes (Asan & Montague, 2014; Parry et al., 2016; Sousan Arafeh and Mary McLaughlin, 2002). Nevertheless, several ethical concerns are raised by the decisions and processes entailed in making and using video recordings of healthcare communication. These ethical concerns come from the ease with which data can be copied and shared and therefore potentially fall into the hands of people who are unauthorised to access it; and the fact that, for adequate analysis, researchers normally need to analyse data in which faces and voices are recognisable. These properties of video data pose potential threats to participant privacy, dignity and

safety. Therefore, on this study several procedures were adopted to protect participants, for example data was stored in a password protected folder.

An observation guide was developed (appendix E) to be applied in the observation of the video records. This guide included different types and subtypes of therapeutic relationship that derived from the models by Szasz & Hollender (1956) and Botelho (1992) and were explored more recently by Roussel & Frenay (2023).

2.4.2. Video elicitation interviews

Video elicitation interviews are interviews done after video observation, asking the participants to reflect on the actions performed (Asan & Montague, 2014). These prompt participants to discuss subjects in greater detail than they would during standard interviews (Henry & Fetters, 2012). One-on-one semi-structured interviews were carried out to explore physiotherapists educational practices. These interviews occurred online, via Microsoft Teams, scheduled according to the availability of participants, one to two weeks after the video recording and were conducted by the lead investigator. An interview schedule was followed (appendix F), and the topics of the interview were the practice of patient education, reasons associated with these practices and variations thereof, based on the video. This schedule was adapted to each interview, taking into consideration the prior observation and including the video excerpts. Before introducing the core questions, a brief review about the purpose of the study, the protection rights, the future use of data collected, and a definition of patient education were included to build comfort with the interview, as well as some characterisation questions about the interviewees.

The interviews were recorded in audio formats for verbatim transcription, as this method facilitates accuracy and transparency during data analysis (Braun & Clarke, 2013; Guest et al., 2012; Ritchie et al., 2014; Tong et al., 2007). Verbatim transcription was performed by the lead researcher, with the support of Microsoft Teams. During the transcription phase, a pseudonym was used to guarantee the participants were non-identified. Additionally, as data collection was performed in Portuguese, translation of some excerpts from the interviews and videos were

carried out by the lead investigator and checked by a certified bilingual translator. The accuracy was then reviewed by the research team.

2.4.3. Skills training

In order to promote the quality of data collection, a skills training was carried out prior to the beginning of the study itself, during the months of March and April 2023. Two initial interviews were conducted, using Microsoft Teams and following the interview schedule developed by Pombares and colleagues (2023). Then the observation of videos was trained with the observation guide, using videos shared by physiotherapists who volunteered to collaborate in this training. After this, four video elicitation interviews with colleagues were completed using the schedule developed for this study to be pre-tested and checked if any changes were needed. All interviews were carried out with physiotherapists who practice in the musculoskeletal context. During this training period, a reflexive diary was developed. In this diary, each interview and video were analysed with the support from the supervisory team, who provided feedback that was integrated in the following interview.

2.5. Data analysis

Data analysis was carried out through a deductive content analysis and a coding scheme was used to classify variables of interest in the video according to the purpose of the analysis.

Coding is a standard procedure to analyse video data (Asan & Montague, 2014). In this study, the focus was on the moments in which the physiotherapist delivered patient education. The interactions of the physiotherapist with the patient were identified and codified according to the types and subtypes of therapeutic relationship proposed by Roussel & Frenay (2023), which were inspired by the models presented by Szasz & Hollender (1956) and Botelho (1992).

Content analysis aims to attain a condensed and broad description of the phenomenon under investigation and the outcome of the analysis may be concepts

or categories that describe that phenomenon (Elo & Kyngäs, 2008). In a deductive approach the researchers seek to use the material collected with a theoretical base structure that determines a priori the main categories and subcategories of analysis (Elo & Kyngäs, 2008; Guest et al., 2012; Moser & Korstjens, 2017b).

The steps followed in the data analysis for each observation and interview were as follows:

1. Observing each video multiple times to immerse oneself in the data;
2. Coding the observation data and entering it into the observation guide (appendix E), for each video individually;
3. Identifying specific excerpts from the video to explore in the subsequent interview;
4. Planning the interview using the previously selected excerpts and adapting the semi-structured interview schedule as necessary (appendix F);
5. Transcribing the interview;
6. Reading the transcript several times and using colour coding to categorise excerpts according to each type and subtype of therapeutic relationship;
7. Reviewing the transcripts and codes to check the coherence between individual codes and the overall perspective of the interview;
8. Entering the coded data into MAXQDA 2024 to facilitate comparative analysis and generate code statistics, supporting the researcher's interpretation and reflection about the data;
9. Selecting excerpts to include in the results chapter and translating them into English;
10. Repeating the process for the subsequent observations and interviews;
11. Writing the findings chapter.

2.6. Strategies for ensuring rigour and quality

Considering the quality criteria defined for qualitative studies, some strategies were employed to ensure the rigour of data analysis

To enhance the credibility of the study, investigator triangulation was implemented. This consists of at least 3 researchers studying the data obtained through the same

method and reach the same conclusion, to ensure the validity of the study (Braun & Clarke, 2013; Guest et al., 2012; Korstjens & Moser, 2018; Ritchie et al., 2014). In this study, the lead researcher performed the analysis and then discussed with the supervisory team.

Additionally, member check was also used as a strategy to promote the credibility. This procedure consists of asking participants to provide feedback about the data analysis performed by the researchers and express their agreement or disagreement (Braun & Clarke, 2013; Guest et al., 2012; Korstjens & Moser, 2018; Ritchie et al., 2014). Two documents were sent to each participant: the transcript of his/her own interview coded; and the MAXQDA 2024 framework representing the codes assigned to his/her interview.

An audit trail (appendix G) was also developed, including the description of the various stages of data analysis of this study, contributing to its transparency (Braun & Clarke, 2013; Guest et al., 2012; Korstjens & Moser, 2018; Ritchie et al., 2014). The audit trail can be used to establish various quality criteria, such as dependability, which allows verification that the analysis process is in accordance with the requirements of the study design; and confirmability, which seeks to guarantee the neutrality of the data interpretation process (Braun & Clarke, 2013; Guest et al., 2012; Korstjens & Moser, 2018; Ritchie et al., 2014).

To assess and minimise the influence of the researchers' assumptions, biases and values on decision-making throughout the study, reflective notes were taken by the lead researcher at each stage of the research process and compiled into a reflexive diary (Braun & Clarke, 2013; Guest et al., 2012; Korstjens & Moser, 2018; Ritchie et al., 2014).

3. Results

Findings are presented and contextualised combining the researchers' interpretations and the participants' accounts, with the participants' validation. Through the strategy of member check, all participants approved the transcription and the respective codes, which were assigned by the research team.

Translated excerpts of interviews and videos are presented to support the analysis. The interview excerpts play a central role in supporting the analysis, while the video excerpts are used to highlight potential coherence or incoherence between what was stated and what was observed. Interview excerpts are identified with the letter "I", then the participant's pseudonym and the transcript line numbers. For videos, the letter "V" is used, then the participant's pseudonym and the time in minutes (m) and seconds (s).

After video collection, 199 minutes of recordings were obtained. At completion of interviews, 290 minutes of recordings were obtained. The videos sent by the participants had an average length of 19 minutes (maximum – 33 minutes; minimum – 5 minutes). The interviews were, on average, 40 minutes long (maximum – 65 minutes; minimum – 14 minutes). The average time between participants sending the videos and the interview taking place was 10 days, except for one interview that took 42 days to be completed due to a schedule incompatibility.

Participant (pseudonym)	**Video duration (minutes; seconds)**	**Interview duration (minutes; seconds)**	**Time between video and interview**
Lourenço	32m39s	47m10s	11 days
Bernardo	30m01s	65m	20 days
Alice	28m11s	38m45s	11 days
André	31m35s	34m32s	4 days
Catarina	05m01s	21m07s	10 days
Sofia	33m28s	49m19s	16 days
Mafalda	9m13s	20m07s	42 days
Filipa	28m53s	14m46s	1 day

Table 1 - Participants' video and interview duration and time between video and interview

3.1. Participant characterisation

A total of eight participants submitted videos and participated in a one-on-one interview. The mean age of participants was 25 years (maximum – 27; minimum – 23), five participants were female and three were male. One participant graduated in 2023, four in 2021, one in 2020 and two in 2019. Two participants had a master's degree. Four of the remaining six were attending a master's degree. Five participants worked in private practice, two in outsourced physiotherapy service and one in a private hospital. All participants worked mostly with patients with musculoskeletal conditions.

Participant	Year of graduation	Academic degree	Clinical practice
Lourenço	2021	Graduate	Private practice
Bernardo	2021	Graduate	Private hospital
Alice	2021	Graduate	Outsourced physiotherapy service
André	2021	Graduate	Outsourced physiotherapy service
Catarina	2020	Graduate	Private practice
Sofia	2019	Master's	Private practice
Mafalda	2019	Master's	Private practice
Filipa	2023	Graduate	Private practice

Table 2 - Participants' characterisation

3.2. Practice characterisation

All videos sent were focused on sessions with patients with musculoskeletal conditions that included patient education. All clinical conditions involved persistent pain such as low back pain, neck pain, osteoarthritis and other persistent pain conditions. None of the videos recorded were from the first session with the patients.

Participant	Patients' clinical condition
Lourenço	Hip osteoarthritis
Bernardo	Chronic low back pain
Alice	Chronic neck pain
André	Achilles tendinopathy
Catarina	Knee osteoarthritis
Sofia	Chronic low back pain
Mafalda	Chronic neck pain
Filipa	Chronic neck pain

Table 3 - Patients' clinical condition

The participants practices were labelled according to four types and eight subtypes of therapeutic relationship that support patient education, previously identified by Roussel & Frenay (2023), (Table 4). Each practice could be labelled with more than one (sub)type.

Types	Subtypes
1. Activity-Passivity	1.1. Biomedical Information
	1.2. Instruction aimed at learning actions or understanding mechanisms
	1.3. Start of personalisation, life context considered
2. Guidance-Cooperation	2.1. Transmission disregarding representations
	2.2. Representations explored, subject to possible correction
3. Mutual participation	3.1. Coaching based on pre-existing motivation
	3.2. Life-project-based learning
	3.3. Trust-based relationship
4. Autonomism	

Table 4 - Types and subtypes of therapeutic relationship

Type 1.: Activity-Passivity

This observed therapeutic relationship underpinned patient education and involved a unidirectional transmission of theoretical knowledge, regardless of what patients already knew or wished to learn. Two scenarios were identified: one in which there was a structured and planned educational intention prepared by the participant before the encounter, and, at the other extreme, the absence of structure or prior educational intent. Additionally, information was communicated when the participant deemed it relevant and the conditions favourable – specifically, having adequate time and being in the presence of a patient perceived as receptive. This type of therapeutic relationship comprised three subtypes: 1.1. biomedical information; 1.2. instruction aimed at learning actions or understanding mechanisms; and 1.3. start of personalisation, life context considered.

Subtype 1.1.: Biomedical Information

Some participants displayed knowledge or listed behaviours that they intended to be adopted by patients, but did not systematically include the rationale in their interaction. The information communicated tended to remain at a superficial level. They spoke in technical terms and focused on a mechanistic view of the body. For example, when Mafalda was asked about her role as a physiotherapist during the recorded education session with the patient experiencing chronic neck pain, she focused on technical and physical aspects of patient care.

“(...) postural issues, quality of movement, the execution of the exercise ehh in general, having a good quality of life, good functionality, in terms of ability to perform a task, and being able to do things that, they didn’t maybe have the idea, they could do it (...)" (I, Mafalda, 130-132)

Some participants also shared information that was limited to physical health, focusing on treatment actions, listing exercises to be completed and recommending behaviours to be adopted, based on the goals they had independently set. For instance, when asked what the main goals in the session with the patient with knee osteoarthritis were, Catarina’s answer included mostly anatomical and physical aspects.

“(...) relieve muscle tension, stretch the muscles, especially the posterior chain, allowing the joint to mobilise as well, give a bit more mobility, promote the production of synovial fluid. Also, strengthen with exercises to build strength and, of course, provide functionality for daily activities, giving some advice.” (I, Catarina, 348-352)

This was in line with the videos where participants whose practice was labelled in this subtype explained biomedical information to patients interspersed with technical care, told them what to do, in a unidirectional way, and patients agreed and followed.

Subtype 1.2.: Instruction aimed at learning actions or understanding mechanisms

Here some participants provided knowledge to help patients learn an action or understand a mechanism. When teaching a technical action such as exercises, participants tended to demonstrate them, have patients do them, and correct them, until the exercises were learnt. For example, when Catarina was questioned about patient’s characteristics that facilitated the delivery of education, she said it was important to do exercises and have patients do them so that they can ask questions, if needed. The question was not really answered though.

"In other words, I think it's important, especially when it comes to exercises, not just to explain or provide a document with exercises, but to actually do them as we explain, so the person can better integrate the exercises. If they have any questions, they can ask, rather than just giving, for example, a document (…)" (I, Catarina, 246-251)

In the videos, it was observed that participants informed patients that they were going to be taught some exercises to do at home, when and how to do them and vaguely explained the importance of doing them. Patients appeared to be passive receivers of this information. When teaching exercises to her patient with knee osteoarthritis in the session recorded, Catarina told her what to do, when and why she should do it, using technical terms - the patient did not speak.

"In terms of increasing mobility, okay? Because the knees become very stiff, okay? Especially upon waking up. Before getting out of bed, you can move them around (...) to help as if we had some oil in the knee, the synovial fluid (...)" (V, Catarina, 00m52s-01m24s)

Some participants also prioritised giving advice about patients' diagnosis and on what should be done as treatment. They considered that if patients understood their clinical condition, they would do as told and be better able to deal with it. This was viewed as "teamwork", encouraging patients to do their homework and avoid expecting that everything would be fixed on the session with the physiotherapist. When Catarina was questioned about what she considered to be her role as a physiotherapist in delivering patient education, she emphasised her responsibility in ensuring that patients understand their clinical condition. She also mentioned that she focused on dealing with patients' expectations, often lowering them.

"In other words, my role as a physio is first to help the person better understand (…) their physical condition and why it emerged, and to explain a bit so they understand the expectations. That is, so the person does not think they will get better in this case, because with physiotherapy we will not be able to solve it, that is, it's not about telling the person they will get better, because in reality, that won't happen (…)" (I, Catarina, 149-163)

Subtype 1.3.: Start of personalisation, life context considered

Some participants integrated aspects of patients' life context and lifestyle in the delivery of patient education. There appeared to be the beginnings of personalisation and an openness to other dimensions of health beyond physical health. Participants tended to encourage their patients to be more physically active. For instance, when questioned about treatment priorities with her patient with chronic neck pain, Alice emphasised the relevance of taking the patient's work context into consideration while providing information and explaining pain.

"(...) To show the person that it wasn't just their own problems, their structural issues, their genetics, it wasn't just that. Everything around them also contributed, and especially because the workload was indeed a major issue. (…) That's what I focused on the most, and also aspects like (...) work stress and everything associated with it, such as lack of sleep (…)." (I, Alice, 163-181)

The observation of the recorded videos showed some participants incorporating aspects of patients' day to day life to set goals, as well as to explain their condition

to them. Participants defined the strategies, instructing patients on what to do and explaining exercises, primarily taking into account their daily life.

“(…) to reduce this pain (...), to reduce this muscle stiffness (...) and move your head well (...) then (...) we will focus more on strength and endurance, which is what you need most for your daily life." (V, Alice, 04m10s-05m03s)

Type 2.: Guidance-Cooperation

In delivering patient education, some participants considered elements that they had asked to patients, such as knowledge, technical actions in their day-to-day life and lifestyle habits. According to these participants, lifestyle habits were collected to personalise education by integrating elements from patients’ daily lives or suggesting changes that were acceptable and sustainable for them. Knowledge or even “false beliefs” were assessed for accuracy and corrected, if necessary, using scientific knowledge.

Additionally, learning methods were cooperative, with participants still holding the most power, determining what the patient needed to acquire and the appropriate method for doing so. Although participants often considered emotional and motivational aspects, these were not actively addressed or worked on with patients, beyond offering empathy and encouragement.

Two subtypes were distinguished depending on whether participants explored patients’ representations about their clinical condition: 2.1. transmission disregarding representations; and 2.2 representations explored, subject to possible correction.

Subtype 2.1.: Transmission disregarding representations

Some participants assigned to this subtype of therapeutic relationship systematically explained the reasons for the diagnosis and the benefits of the advised way of doing daily activities. They seemed to communicate without taking into consideration what patients already knew or checking if they were prepared to learn the information provided. After re-watching an excerpt of the video sent by André, he was asked to describe the purpose of his words in that segment where

he, as a physiotherapist, had asked his patient with Achilles tendinopathy about the recovery time that he expected. After asking the patient this question, André proceeded to answer by presenting scientific evidence, without waiting for a response. According to André, this procedure aimed to address and manage the patient's expectations, essentially trying to lower them.

"OK, here the aim was to manage expectations, as I previously mentioned, this patient had this condition for a long time. And, and it wasn't expected, at least according to what (…) According to the literature, these types of tendon conditions are not expected to recover easily. (…) I didn't want to take away hope that the patient would get better. I prefer these expectations to be lower rather than later lead to frustration and abandonment of the treatment (…)" (I, André, 418-420 and 426-433)

Moreover, in the videos observed it was possible to identify participants delivering information without having patients' perspectives into consideration, as in Alice's video where she told the patient the recommendations that should be followed after the end of the treatment.

"(...) When all this is over, what are you going to do? There are certain things that will be important to always maintain so that we don't create a situation where it gets as bad as it was before (...) such as maintaining physical activity, (...) very important (...) our posture at work (...) then mobility exercises that I will indicate to do at home and at work (...) and managing work-related stress (...)" (V, Alice, 24m30s-26m50s)

Subtype 2.2.: Representations explored, subject to possible correction

Some participants sought to gather patients' understanding, such as what their condition meant for them, and then confronted these views with scientific facts in an attempt to "correct" them. They allowed patients to speak but subsequently corrected them with scientific information. They also explored patients' knowledge and beliefs by using open-ended questions. When asked to describe her thought process and explain step-by-step how she planned the education strategies used in the session with the patient with chronic neck pain, Alice responded that she tried to give the patient space to speak and then waited for an opportunity to correct her with information from literature.

"In other words, at the moment, I first try to create a space without many restrictions so that the person can start communicating on their own. Ehh as they speak, I try to address the points I have studied and know I need to discuss in a way that I think the person will want to hear and will be able to listen to more attentively. So, whenever opportunities arise for me to emphasise certain moments again, that's what I do." (I, Alice, 111-117)

Some participants also focused on sharing knowledge about the clinical condition (mainly about pain) by talking to patients, based on what they perceived the patients wanted to know. According to these participants, this approach could help not only in "correcting wrong beliefs", but also in providing patients with the confidence to understand their pain, be able to ask questions, participate in the decision-making and manage their own pain. They shared evidence-based information because they considered that it would increase treatment adherence. Information published by researchers was seen as a useful support to strengthen the participants' discourse. When questioned about the key educational points covered in the session with the patient with osteoarthritis, Lourenço emphasised the relevance of explaining pain, as this seemed to be the most difficult topic for patients to understand.

"(...) The educational topics that I rely on the most with this type of population mainly involve the description and explanation of their pain (...) it is very difficult for the person to understand, especially initially, how pain can be more or less controlled (…)" (I, Lourenço, 87-89 and 96-101)

The exploration of patients' representations about pain and the subsequent provision of information based on literature was found in the interaction between Lourenço and the aforementioned patient in the recorded session. Lourenço used a closed-ended question to explore if the patient believed that exercise was good for their condition. Considering the patient's answer *"(…) it helps a lot."*, Lourenço replied *"It makes sense."* and proceeded to explain the reasons and benefits of physical activity. *(V, Lourenço, 04m20s-07m26s).*

Type 3.: Mutual Participation

For the participants assigned to this type of therapeutic relationship, patient education typically began with the exploration of patients' pre-existing knowledge, skills and representations, gathered through active methods. Therefore, active methods such as reformulation, echoing, open-ended questions and silences were used to support education. Motivation and psychosocial factors were questioned and discussed as part of the education session. For the most part of the sessions, these participants did not impose a rhythm for patient education delivery; instead, it was determined by the patients. The rhythm seemed to slow down to keep up with patients' learning pace or accelerate to meet their goals.

Three subtypes were differentiated and seemed to represent a shift from physiotherapist-centred approaches to person-centred approaches: 3.1. coaching based on pre-existing motivation; 3.2. life-project-based learning; and, 3.3. trust-based relationship.

Subtype 3.1.: Coaching based on pre-existing motivation

Some participants often assessed patients' motivation to determine whether factors, such as internal motivation, were present to optimise patient education. When patients did not understand information provided, these participants repeated it by modifying their approach: using simpler terms, other methods (such as graphs) or metaphors. Some participants also worked on raising patients' awareness about specific behaviours, such as sedentarism. For example, Lourenço spoke about providing patients with strategies to improve their social participation and tried to motivate patients to be more physically active.

"(…) during the session, what I focus on the most with the patient is (…) pacing strategies and social participation strategies. Often, these individuals reveal lack of social participation and physical activity, so I attempt to foster strategies that promote greater social participation. (…) for example, a person who has an elevator and who lives on the third floor, I try to ask them to walk up to the first floor, for example, and then take the elevator on the first floor to the third (...)" (I, Lourenço, 203-213)

In the recorded interaction with patients, some participants proposed treatment options as well as specific strategies to implement those options. These participants had their own goals as well as a vision about the most adequate treatment plan. Nevertheless, they seemed open to negotiating the plan with patients, although the scope for negotiation appeared to be limited. The following video excerpt provides an example of a session where André was working with a patient with Achilles tendinopathy and presented options of exercises for the patient to choose from:

(...) there are a few things I wanted to go over with you (...) I have three exercises that we can work on today. The first option (...) Which of these do you prefer to focus on today?" (V, André, 4m33s-05m26s)

Subtype 3.2.: Life-project-based learning

Some participants focused on helping patients gradually gain autonomy in making health decisions. They facilitated the emergence of patients' life project and goals through interrogative methods, using open-ended questions. The participants assigned to this subtype of therapeutic relationship sought to understand what patients already knew about their pain or clinical condition through questioning. Professional knowledge and specific instructions were not considered to be a priority unless patients requested them. For example, André emphasised his role as a physiotherapist delivering patient education as promoting patient's autonomy and his ability to manage his clinical condition in the future.

"Therefore, I took a position in wanting to promote autonomy so that the patient could manage the condition in a more independent way. Thus, the simple messages I wanted to convey were always aimed at ensuring the person learns then to continue doing the exercises or manage the situation in the future (…)" (I, André, 125-129)

Some participants tried to deconstruct the patients' representations of their clinical condition and what they should do to improve it, encouraging them to adopt alternative strategies while considering what patients liked and wanted to achieve. Bernardo reflected on the progression of his performance in implementing patient education since he graduated three years ago. In the beginning, he considered that he had focused his practice on "giving instructions" and telling patients what they

had to do. He believed that his practice has changed and became more focused on first understand what patients know, their motivation and their main goals.

"Therefore (…) it was more about trying to understand what the patient already knows beforehand, because I later learned about a strategy called COM-B (…) which I think is a good strategy. Essentially, the COM-B first tries to understand what the patient already knows in terms of motivation, opportunity, and capability, and only then provide the necessary information." (I, Bernardo, 169-174)

Some participants focused on empowering patients, allowing them to be able to improve their self-efficacy. For example, Lourenço perceived that his role as a physiotherapist delivering patient education as being available to respond to patients' needs, while also promoting autonomy and self-management.

"I believe that the role of a physiotherapist is to be proactive in providing clarification and making oneself available to address certain and specific doubts that the patient may have. But I also consider my role as a promoter of autonomy, well-being, and enabling the person to carry out their activities as independently as possible. (...) I think that the educational role of the physiotherapist is precisely to provide the patient with the means to manage their condition autonomously and without needing to continuously rely on health services." (I, Lourenço, 131-142)

Some participants also considered aspects such as sitting at the same level as patients and making eye contact, creating a comfortable space for patients to talk. They often used active communication techniques like reformulation, reflection, echo, listening signals and respecting the silence. For example, in the interaction between Bernardo and his patient with chronic low back pain it was possible to observe him using a reflexive question to encourage the patient to reflect about the strategies to deal with pain.

"(...) Whenever you experienced a crisis, the strategies you adopted were to lie down and use medication. Do you still think these are effective strategies as the pain has persisted (...)?" (V, Bernardo, 22m37s-25m44s)

Subtype 3.3.: Trust-based relationship

Some participants delivered patient education based on the patients' desires and goals. Participants assigned to this subtype of therapeutic relationship viewed the patients' health problem as the one they considered to be the issue, and the patients' interpretation about this problem was taken into consideration. For instance, when Sofia was providing her patient with an explanation about her chronic low back pain, she tried to understand the challenges the patient was facing and how they could, together, overcome them.

"(...) Here I was trying to understand what challenges she was facing at this point and how we could (...) address them." (I, Sofia, 105-108)

Some participants tried to get to the root of the problem by asking patients about how they felt about their problem. Health behaviour goals and learning needs were co-decided considering what was possible for, and desired by, patients. These were the patients' own goals and not the standard recommended goals described in the literature. Although participants maintained their goals, the patients' goals prevailed. For instance, when describing her thought process step by step and how she implemented her educational strategies, Sofia explained that some physiotherapy sessions with that specific patient were based on discussions between them. During these sessions, the patient would, for example, identify difficulties she faced, and the physiotherapist would work with the patient to find strategies to overcome them.

"(...) sometimes we had sessions which weren't quite that typical physiotherapy session expected. Nevertheless, I would go with her to my room and just talk about her doubts, and about the integration of some learnt concepts into her daily life (…). That is, what she identified… for example, at home she mentioned that she had difficulty storing Tupperware in a low cabinet (…) we found strategies for her to do it, either by changing her movements or adapting the way she could perform the movement, or by giving strategies (…)" (I, Sofia, 141-149)

This reported approach was consistent with the interaction observed in the video recorded by Sofia – she tried to get feedback from the patient first rather than giving information from the start.

“(...) what can we do here, what do you think would benefit you here so that we can achieve that goal more easily and you can go a little more relaxed?" (V, Sofia, 05m05s-05m36s)

Type 4.: Autonomism

This type of therapeutic relationship was not observed in the videos sent by participants nor referred in the interviews.

3.2.1. Overview of variations in practices among participants

Most participants exhibited and reflected upon characteristics of more than one practice type of therapeutic relationship underpinning patient education, meaning that, for example, a single participant could be assigned to both type 1 and type 2. The various (sub)types and the number of (sub)types that participants showed in the videos versus the interviews can be observed in Figures 1 and 2. The colours represent each (sub)type. In the observation codes the numbers represent the number of codes assigned to each participant and, in the interview codes, the numbers represent the number of excerpts that were coded with each (sub)type.

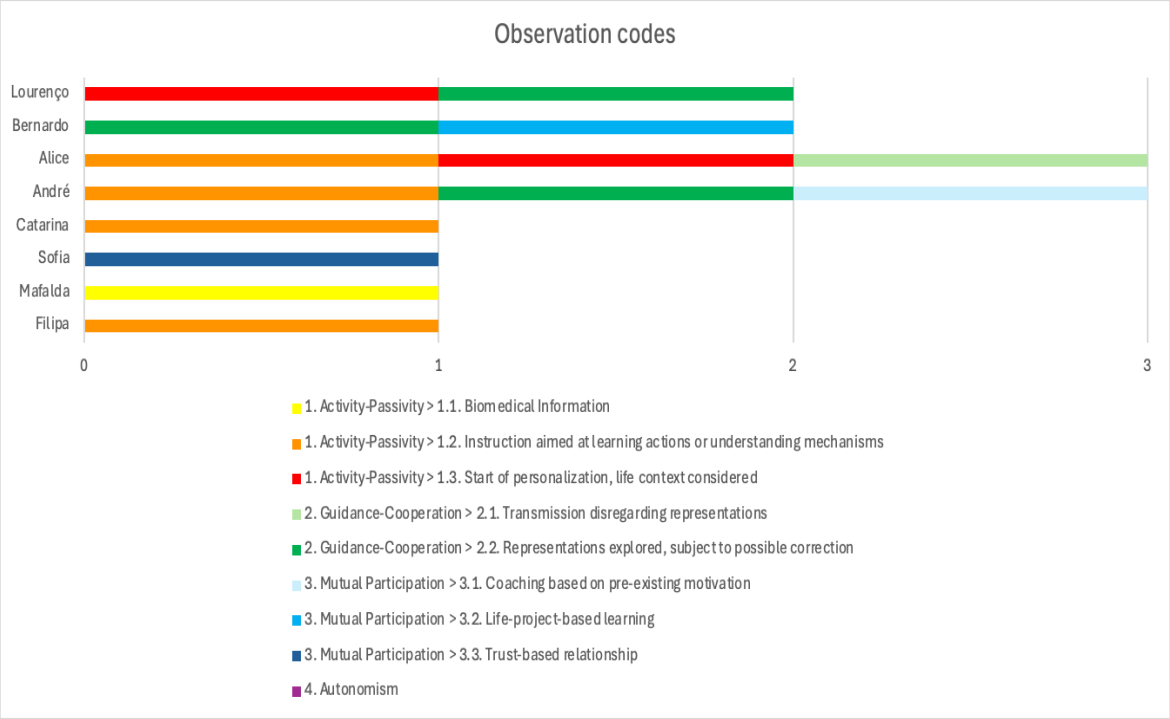

Figure 1 - Participant's observation codes

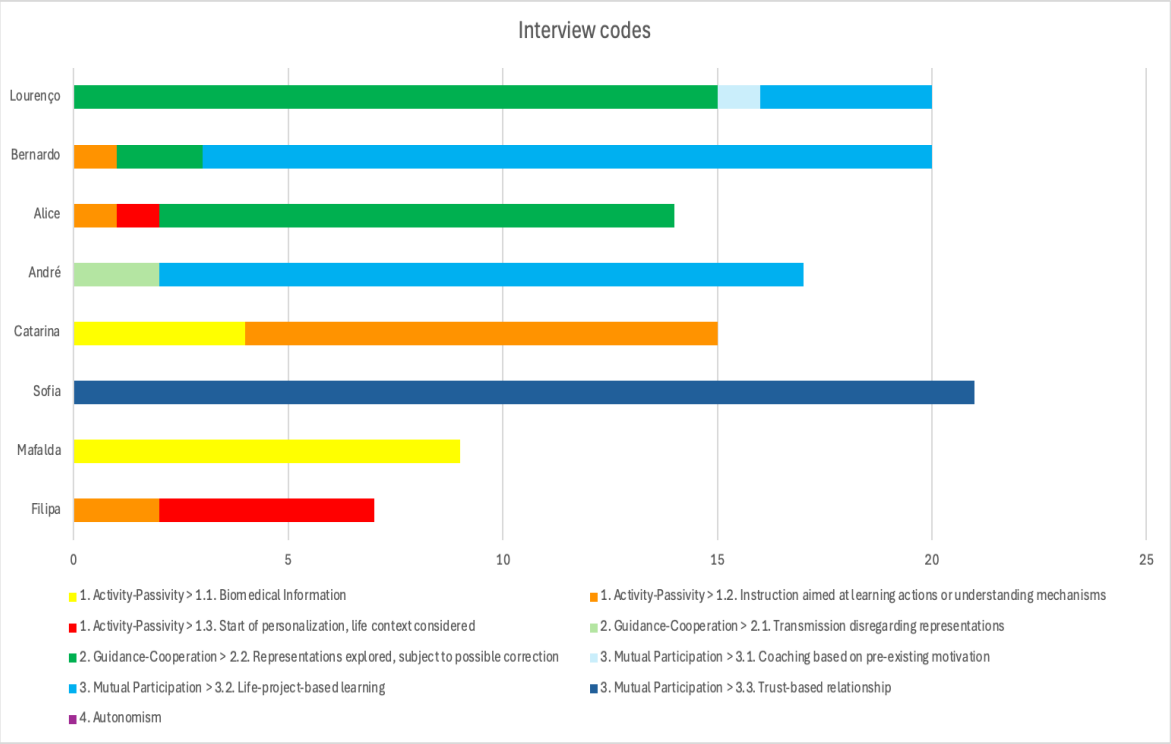

Figure 2 - Participant's interview codes

Considering the proportion of codes, it was possible to identify a dominant type assigned to each participant and this was mostly consistent across both videos and interviews. More specifically, three participants were mostly assigned to type 3 (Bernardo, André and Sofia); three other participants were mostly assigned to type 1 (Catarina, Mafalda and Filipa); and two participants were mostly assigned to type 2 (Lourenço and Alice). Within each dominant type of therapeutic relationship, each participant demonstrated behaviours and discussed thoughts related to more than one subtype. Only two participants were almost exclusively focused on a single subtype of therapeutic relationship, and this was consistent across both the videos and the interviews. One of these participants (Mafalda) was exclusively coded in subtype 1.1., while the other (Sofia) was coded in subtype 3.3.

4. Discussion

4.1. Overall discussion

To the authors' knowledge, this is the first study to explore Portuguese novice physiotherapists' practice of patient education through the observation of videos and elicitation interviews.

The findings of this study suggest that participants' therapeutic relationships and subsequent educational practices often fall on a continuum between an activity-passivity approach (type 1) and a mutual participation approach (type 3). Five out of eight participants were primarily assigned to an activity-passivity (type 1) and a guidance cooperation (type 2) approaches, which tend to align with physiotherapist-centred models of practice. This latter trend has been supported by existing literature that suggests physiotherapists tend to follow educational approaches that do not promote patients' engagement and active participation in their rehabilitation process (Roussel & Frenay, 2019; Westlake et al., 2022). However, it is noteworthy that contemporary recommendations for clinical practice have been increasingly shifting towards a more person-centred approach, as reflected in recent studies (Cheng et al., 2016; Cooper et al., 2008; Forbes et al., 2018; Harman et al., 2011; Roussel & Frenay, 2023; Wijma et al., 2017). This shift suggests an evolving recognition of the importance of patient engagement and participation in shared decision-making in therapeutic settings and it was found also in three of this study's participants that were mainly assigned to an approach based on mutual participation (type 3).

The educational practices observed in this study reflect the power dynamics within the physiotherapist – patient relationship. While the typology of patient education practices is not entirely new, this study offers an empirical examination of the theoretical models by Szasz & Hollender (1956) and Botelho (1992) as applied to novice physiotherapists' clinical practice. The typology of therapeutic relationships underpinning patient education proposed by Roussel & Frenay (2023) was applied for the first time to explore Portuguese novice physiotherapists' delivery of patient education, providing an overview of practices ranging from physiotherapist-centred to person-centred orientations. According to Szasz & Hollender (1956), no single

type of therapeutic relationship is universally superior; rather, HCPs should adapt their approach based on the patient's health condition. Notably, Szasz & Hollender (1956) identified mutual participation as especially suited to chronic conditions. Recent literature supports this view, indicating that practices like mutual participation foster PCC by promoting patient motivation, addressing psychosocial factors and enhancing decision-making autonomy (Aoun et al., 2018; Elwyn et al., 2014; Kuosmanen et al., 2021; Marincowitz, 2004; Tobiano et al., 2016).

Participants assigned to type 1 – activity-passivity demonstrated limited reflexivity regarding their educational practices, struggling to articulate their actions clearly. This aligns with findings by Roussel & Frenay (2023), who noted similar challenges when prompting their study's participants (HCPs) to describe their educational practices. Those assigned to this type predominantly discussed technical aspects of treatments, such as ultrasound and massage, emphasising compliance ("patients did as told") as a facilitator of educational sessions. This tendency for physiotherapists to focus primarily on mechanical treatment aspects, rather than integrating cognitive, psychological and social factors, is also documented in the literature (Gardner et al., 2017; Synnott et al., 2015). For example, the systematic review by Synnott et al., (2015) concluded that, although physiotherapists partially recognised cognitive, psychological and social factors as relevant in the rehabilitation of people with chronic low back pain, they preferred to deal with the mechanical aspects of the condition and perceived their training as not preparing them with the necessary skills and confidence to successfully address the multidimensional nature of pain. This type of therapeutic relationship is also characterised by the fact that the power relies on the HCP, who decides the best course of action to promote the patient's health (Kaba & Sooriakumaran, 2007; Szasz & Hollender, 1956).

Participants assigned to type 2 – guidance-cooperation seemed to begin their educational practices by giving patients space to communicate openly, avoiding transmitting all knowledge at once. Instead, they introduced information gradually, aligning it with the subjects raised by patients and waiting until they considered the patients were ready to receive the information. These participants seemed to believe that trust and empathy could be fostered through patient education and discussed

the importance of a strong therapeutic relationship for effective patient education. Similarly, a study by Santos and colleagues (2022) highlighted that trust and rapport could be promoted through patient education and emphasised the therapeutic relationship as a crucial element for person-centred practice. However, the power for decision-making regarding treatment and patient education still relied on the participants assigned to this type of therapeutic relationship, as patients were expected to cooperate and accept the guidance provided. This patient's role seems to diverge from patients' preferences to have their learning needs addressed by physiotherapists, reported in a recent qualitative study based on interviews with Portuguese individuals with non-specific chronic low back pain (Caeiro et al., 2022). In this latter study, the patients appeared to receive pain education that did not address their limited understanding of pain, did not teach them how to manage pain and did not meet their needs for validation and reassurance (Caeiro et al., 2022).

On the other hand, participants assigned to type 3 – mutual participation, focused on understanding patients and viewing them as partners in the treatment, looking for what they could add to patients' knowledge and lifestyle. These participants sought to answer patients' questions and helped them identify factors that could enable them to address some of the challenges they faced. This approach meant that recommendations were given after exploring patients' assumptions. Patient education took the form of a discussion, a verbal exchange, and these participants sought to engage patients in the treatment, foster their autonomy and motivation, promote shared decision-making, integrating their intentions and attitudes and treating them as partners. These physiotherapists' characteristics are found in the literature on mutual participation as essential for fostering behaviours that promote therapeutic alliances (Aoun et al., 2018; Elwyn et al., 2014; Marincowitz, 2004; Miciak et al., 2018b). They are also key for a PCC approach in which patients' autonomy is recognised by HCPs and care is co-designed and personalised to each patient (Santana et al., 2018).

There were no participants assigned to type 4 – autonomism, a type that is considered rarer in healthcare delivery (Roussel & Frenay, 2023). According to previous literature, in type 4, HCPs suggest health behaviours based on their understanding of patients' feelings and accompany patients in the implementation

of these health behaviours, standing alongside them (Roussel & Frenay, 2023). The practice within this type of therapeutic relationship presupposes that patients are well-educated and able to exert greater control over and assume responsibility for aspects of their healthcare (Botelho, 1992). Autonomism advocates the patient's right for self-determination and can be achieved with HCPs empowering patients to exert greater autonomy in the therapeutic relationship (Botelho, 1992). This means that HCPs may explain the condition to the patient and outline the available treatments, but it is ultimately the patient's choice to, for example, request exams, consult another HCP or choose the treatment, according to their preferences and needs (Botelho, 1992). A hypothesis to explain why no participants were integrated in this type may be because it challenges HCPs to rethink their traditional roles in healthcare delivery. This approach is entirely person-centred, empowering individuals to make decisions about their own health (Aguilar-Rodríguez et al., 2021). There may be other explanations such as time or practice constraints whithin their clinical context, patients' preconceived ideas about physiotherapy and the fact that undergraduate students are typically not trained in these approaches to communication and collaborative practice (Aguilar-Rodríguez et al., 2021; Aoun et al., 2018; Bastemeijer et al., 2021; Forbes et al., 2018; Matthews et al., 2015; Ross & Haidet, 2011).

The results of this study demonstrate that, although participants shifted between (sub)types of therapeutic relationship during their videos and interviews, the primary type of therapeutic relationship established with the patient remained consistent for all participants. For example, a participant that was mainly assigned to type 1 in the video, was also mainly assigned to type 1 in the interview. Despite that, there were two kinds of variations uncovered: variations within a type and variations between types, both in videos and interviews. The use of two methods of data collection enabled a deeper understanding of these variations, as interviews revealed instances where participants implemented educational practices that did not align with their own ideals or with their descriptions of intended practice. A possible explanation for this discrepancy is the "intention-behaviour gap", which highlights the disparity between intention and actual behaviour (Ajzen, 1991). The variation phenomenon has previously been highlighted in patient education literature on the

perceptions and the actual practice of HCPs. Previous research primarily focused on a single dimension of variation: either variations within a type or between subtypes (Karlsen, 1997). Karlsen, (1997) examined variations within two (sub)types – standardised information transmission versus personalised education – which roughly parallel the type 1 versus type 2 distinctions in this study. While the classification systems differ in the number of types, both Karlsen (1997) and Roussel & Frenay (2023) underscore the role of context and patient perspectives in shaping variations between and within (sub)types. The current study is the first, to the authors' knowledge, to add the variations between intention and practice and to add observation as a method, beyond interviews.

The overall exploration of this study's participants' practices seems to highlight some key challenges that included difficulties in power distribution, promoting active participation of patients, personalising educational content, adapting communication and listening to the patient, as well as respecting the patients' right for self-determination. Some of this study's participants reflected on their perceived need to improve their competences on clinical reasoning and patient education as the main motivations to apply for postgraduate training. The transfer of concepts of a PCC approach from the educational context in undergraduate training to clinical practice context is known to be challenging (Hojat et al., 2009). Part of this challenge can be explained by the difficulties in assessing and addressing the psychosocial factors that impact the presentation of clinical conditions (Jones & Rivett, 2019; Rosewilliam et al., 2019), as well as by the struggle to empower patients and to tailor patient education to each patient individually, according to their needs (Aguilar-Rodríguez et al., 2021). This study's findings suggest the relevance of integrating and training clinical reasoning strategies as well as communication skills and patient education associated with a biopsychosocial model, potentially through experiential learning approaches like simulation, as mentioned in the literature (Forbes, 2017a; Forbes, Mandrusiak, Russell, et al., 2017).

Finally, in the Portuguese context, new graduates may start their professional lives typically without a formal support or mentorship from senior physiotherapists, and they may be responsible for managing patients with complex clinical conditions (Santos et al., 2022). Research from other countries, such as Australia, has

supported the need for formal mentorship from experienced physiotherapists to help new graduates in gaining experience (Davies et al., 2016; Forbes & Ingram, 2021; Stoikov et al., 2022). On the other hand, professional development through further academic knowledge in physiotherapy and reflection on the models that underpin clinical practice, and particularly patient education, could help to potentially enhance patient education strategies by developing critical thinking, advanced clinical reasoning and a set of competencies for effective patient education (Jovanović & Stojanović-Jovanović, 2020; Petty et al., 2011).

4.2. Study limitations

Several limitations must be taken into account. The number of participants included in the study can be seen as a limitation. However, the nature of ethnography must be considered. Ethnography seeks to provide an in-depth understanding of a particular culture or social group by immersing oneself in their natural environment and observing their behaviours, interactions, and perspectives firsthand (Creswell, 2009; Dourish, 2014; Reeves et al., 2008, 2013; Ritchie et al., 2014). Consistent with the ethnographic approach, small samples are commonly advocated for ethnographic studies to better understand each participant.

Another limitation that must be considered is the time restrictions for this study, since ethnographic studies often require long periods in the field conducting observations and interviews (Dourish, 2014; Reeves et al., 2008, 2013). This study could benefit from a longer period of observation, including more than one session from each participant to further enhance comprehension of the participants' educational practices. But, due to recruitment difficulties and the time allowed for this study, it focused on one educational session from each participant.

The choice of video-based observation, which is a non-participant observation, as a method, although having a series of advantages that were described in the methods chapter, could have brought limitations as well. The goal of nine observations and interviews with nine physiotherapists and nine patients was not reached. Regardless of participated or non-participated, the method of observation

may increase the participants' perceptions of exposure of their clinical practice, and this may have limited the number of participants that volunteered to this study.

Moreover, even though existing literature indicates that video observation limits the possibility of participants altering their behaviour (Hawthorne effect) when compared to having a human observer present (Asan & Montague, 2014), this may still have happened, increasing desirability bias. This bias could have been mitigated with the recording of multiple sessions, but also through taking anonymity measures and combining methods like interviews that were executed in this study.

Additionally, the inexperience of the lead investigator could also be a limitation of the study, especially in carrying out observations, interviews and analysis. However, to minimise this, besides the skills training carried out in observation and interviews with physiotherapists before the start of the study, the strategy of investigator triangulation was used and an audit trail regarding the data analysis process was developed, which were described in the methodology chapter.

Finally, this study's findings are not expected to be generalised, considering that the aim of ethnography is not to generalise the results, but to gain an in-depth understanding of a given culture or social group. This study's findings should be considered in terms of transferability, where the results can be transferred to contexts that may have some similarities with the context where the study was carried out (Korstjens & Moser, 2018). Bearing this in mind, a description of the study context has been provided, as well as the characteristics of the participants and verbatim transcripts of interviews to support the researchers' interpretations.

4.3. Future research

This study examined the therapeutic relationships underpinning patient education practices among novice physiotherapists. Observing experienced physiotherapists could provide valuable insights, as research suggests notable differences between experienced and novice practitioners. Experienced physiotherapists generally encounter fewer challenges and barriers in delivering patient education (Forbes, Mandrusiak, Smith, et al., 2017; Santos et al., 2022; Svavarsdóttir et al., 2015). Understanding whether these observations align with existing literature, and

identifying specific distinctions between novice and experienced physiotherapists, could enhance comprehension of effective patient education practices and professional development in this area. Additionally, bearing in mind the challenges and barriers reported in this study for novice physiotherapists to implement educational practices, it could be valuable to research the training needs for postgraduate education (Gosling, 1997, 1999; O'Shaughnessy & Tilki, 2007).

Moreover, the patient perspective on education during physiotherapy sessions could also provide valuable insights. Research indicates that patients often appreciate clear explanations and prefer to be involved in decision-making regarding their care (Bosveld et al., 2024; Caeiro et al., 2022; Cooper et al., 2008; Grenfell & Soundy, 2022; Svavarsdóttir et al., 2015). However, some patients choose not to engage actively in their treatment decisions (Levinson et al., 2005). Exploring the reasons behind these preferences and examining the differences between patients who wish to be involved and those who do not, could further enrich understanding of patient-centred education in physiotherapy.

This study also focused on observing only one session with each patient. Future research that accompanies physiotherapists during the rehabilitation of patients, since the first session to the last, prolonging the time of observation, could be pertinent to understand the implementation of patient education across a continuum of care.

Further research, on a larger scale, of variables such as the years of practice, clinical context and academic level of physiotherapists could contribute to understanding if those characteristics have influence on how education is practiced.

It could also be of interest to address other questions such as the prevalence of each (sub)type in the clinical context of physiotherapists and if and how type 4 is practiced by physiotherapists.

Lastly, since the use of artificial intelligence in clinical care is growing (Mittelstadt, 2021), research exploring the impacts of AI systems on the therapeutic relationship and subsequently on patient education could provide relevant insights.

5. Conclusion

This study sought to explore the practice of Portuguese novice physiotherapists regarding patient education in musculoskeletal clinical practice. Specifically, it aimed to explore the models of therapeutic relationship that underpinned this practice, drawing on the models of Szasz & Hollender (1956) and Botelho (1992) and following the framework of typologies of practice proposed by Roussel & Frenay (2023).

To the authors' knowledge, this was the first study to explore Portuguese novice physiotherapists' delivery of patient education. While variations were observed, the primary types of therapeutic relationships underpinning patient education practices among novice physiotherapists tended to remain consistent across both observations and interviews. This study's findings provided an overview of practices that ranged from physiotherapist-centred to person-centred orientations. More specifically, Portuguese novice physiotherapists practices of patient education appear to sit between the mutual participation and the activity-passivity types. However, it is noteworthy that more than half of the participants were primarily assigned to physiotherapist-centred practices.

Although some of these study's participants were able to implement mutual collaboration with patients and engaging them in the treatment, these findings also suggested participants' challenges to reach a mutual participation relationship with patients. Further research focused on how education is implemented by novice and experienced physiotherapists, including longer periods of observation, as well as on the variables that may influence it and the training needs of physiotherapists, may contribute to the development of strategies that engage physiotherapists in effective person-centred education practices.

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Appendices

Appendix A. Study explanatory letter – Physiotherapists

Carta Explicativa do Estudo - Fisioterapeutas

Título do Estudo: How Portuguese novice physiotherapists practice therapeutic education? A video elicitation interview study in musculoskeletal private practice

Título do Estudo (em português): Como é que os fisioterapeutas recém-licenciados portugueses praticam a educação terapêutica? Um estudo de entrevistas de elicitação de vídeo em prática privada músculo-esquelética

Caro(a) Fisioterapeuta,

O meu nome é Isabel Teixeira Fernandes, sou Fisioterapeuta e estudante do 2º ano do Mestrado em Fisioterapia em Condições Músculo-Esqueléticas, lecionado pela Escola Superior de Saúde do Instituto Politécnico de Setúbal (ESS-IPS), em parceria com *a Nova Medical School*/ Faculdade de Ciências Médicas (NMS/ FCM) e com a Escola Nacional de Saúde Pública da Universidade Nova de Lisboa (ENSP-UNL). De momento, encontro-me a conduzir um estudo intitulado "*How Portuguese novice physiotherapists practice therapeutic education? – A video elicitation interview study in musculoskeletal private practice*" desenvolvido no âmbito da minha dissertação de mestrado. Este estudo conta com a orientação da Professora Doutora Carmen Caeiro e coorientação da Professora Doutora Roma Forbes.

Gostaríamos de convidá-lo(a) a participar neste estudo. Antes de tomar qualquer decisão, é importante que compreenda as razões pelas quais este estudo está a ser conduzido e o nível de envolvimento que lhe é pedido. Por favor, utilize o tempo que necessitar para ler a informação que se segue. Poderá falar com outras pessoas sobre este estudo, se o desejar. Se algum aspeto não for claro ou se desejar mais informação por favor não hesite em colocar-nos as suas questões.

Utilize o tempo que necessitar para decidir se deseja ou não participar neste estudo.

Parte 1 – O propósito do estudo e o nível de envolvimento necessário

Qual o propósito deste estudo?

O propósito deste estudo é caracterizar e compreender a prática de fisioterapeutas recém-licenciados portugueses no que diz respeito à utilização da modalidade de intervenção educação terapêutica no contexto da prática privada musculoesquelética. Mais especificamente, pretende-se explorar os modelos de relação terapêutica que sustentam esta prática.

Porque fui convidado(a)?

Foi convidada(o) para participar neste estudo por ser um(a) Fisioterapeuta recém-licenciado(a) (com 5 ou menos anos de prática profissional), por ter concluído a sua licenciatura na Escola Superior de Saúde do Instituto Politécnico de Setúbal e por trabalhar no setor privado, maioritariamente com condições músculo-esqueléticas.

Tenho mesmo de participar?

A decisão de participar neste estudo é sua. Iremos descrever-lhe o estudo ao longo desta ficha informativa e terá o tempo que necessitar para ler e colocar questões. Apenas serão incluídos os fisioterapeutas que manifestarem o seu consentimento informado. É livre de desistir do estudo a qualquer momento, sem que tenha de o justificar, podendo contactar a investigadora principal através do e-mail disponibilizado no final deste documento, informando da desistência da participação.

O que acontece se aceitar participar?

Após a assinatura do consentimento informado ser-lhe-á pedido que grave uma sessão de fisioterapia à sua escolha, na qual englobe a componente de educação do utente. Deverá convidar o(a) utente a participar no estudo, informar sumariamente sobre o que envolve a participação no estudo e entregar a ficha informativa que será enviada para si pela investigadora responsável. Caso o(a) utente tenha interessem em participar num estudo, será necessário que solicite o

seu consentimento informado, através de um *link* que será enviado, pelo investigador principal, para si.

O vídeo poderá ser gravado com qualquer instrumento com boa qualidade de imagem que possua (por exemplo o telemóvel) e ser colocado num ângulo à sua escolha, desde que garanta visibilidade durante a sessão. De seguida ser-lhe-á pedido que compartilhe o vídeo realizado, inserindo-o no(a) seu(ua) OneDrive (Outlook) ou Drive (Gmail), e que envie o link de partilha para o e-mail da investigadora responsável. Este vídeo será transferido para uma pasta protegida por uma palavra-passe no computador da investigadora responsável e poderá ser eliminado por si da OneDrive ou Drive após 5 dias de partilha.

Após este primeiro procedimento será convidado(a) a realizar uma entrevista individual, em formato online, na plataforma Teams (ou outra à sua escolha) uma a duas semanas após a partilha do vídeo, tendo em conta a sua disponibilidade. Nesta entrevista recordaremos o vídeo e farei questões para entender melhor a sua prática e razões associadas com esta, considerando o tema da educação do utente. A entrevista terá uma duração mínima prevista de 30 minutos e máxima de 90 minutos. Durante a entrevista, serão explorados aspetos da sua prática clínica, nomeadamente da prática de educação em utentes com condições músculo-esqueléticas. A entrevista será gravada em formato de áudio, para possibilitar a transcrição e posterior análise dos dados recolhidos durante a mesma. Todos os nomes serão retirados e substituídos por pseudónimos para garantir o anonimato de todos os envolvidos. Apenas a equipa de investigação deste estudo terá acesso aos vídeos e entrevistas a fim de analisar o seu conteúdo.

Quais são as possíveis vantagens de participar?

A sua participação neste estudo irá ajudar-nos na compreensão dos modelos da prática clínica de educação terapêutica em utentes com condições músculo-esqueléticas em contexto privado e motivos dessas práticas dos fisioterapeutas recém-licenciados portugueses. Não lhe podemos prometer que este estudo o (a) ajude de alguma forma. Contudo, podemos garantir-lhe que a informação que retiramos dele irá permitir uma reflexão acerca dos modelos de prática de educação terapêutica dos fisioterapeutas portugueses recém-licenciados e das

suas dificuldades, podendo contribuir para refletir sobre os programas curriculares do curso de Licenciatura em Fisioterapia em Portugal, principalmente no que diz respeito ao desenvolvimento de competências para a educação dos utentes.

Quais são as possíveis desvantagens de participar?

Os procedimentos descritos para a realização deste estudo não apresentam riscos associados, pelo que, não são esperadas quaisquer implicações negativas para os participantes deste estudo.

E se houver algum problema?

Se desejar obter informação adicional sobre qualquer aspeto deste estudo, poderá contactar a investigadora responsável: Isabel Teixeira Fernandes, através do endereço 220512005@estudantes.ips.pt ou a orientadora científica do estudo: Professora Doutora Carmen Caeiro, através do endereço carmen.caeiro@ess.ips.pt.

Se desejar fazer uma reclamação poderá contactar a Comissão de Ética do Instituto Politécnico de Setúbal, através do endereço comissao.etica@ips.pt.

A minha participação neste estudo será confidencial e anónima?

Sim. Toda a informação recolhida sobre si será mantida em estrita confidencialidade e será mencionada de forma codificada e anónima. Será utilizado um sistema de codificação da sua identidade, que permitirá que o estudo funcione em anonimato, através da atribuição de um nome fictício. Os dados recolhidos serão armazenados numa pasta protegida por palavra-passe no computador pessoal da investigadora principal e destruídos após 3 anos.

O que irá acontecer às informações que eu der sobre mim?

As informações que transmitir durante a gravação da sessão de tratamento serão apenas visualizadas pela equipa de investigação. A entrevista gravada em formato áudio será transcrita pela investigadora principal com o intuito de ser analisada posteriormente, sendo atribuído de imediato um pseudónimo para garantir o seu anonimato.

O que irá acontecer com os resultados deste estudo?

Os resultados do estudo apresentados em contexto de apresentação do Relatório de Investigação do Mestrado em Fisioterapia em Condições Músculo-Esqueléticas, nunca sendo os participantes identificados de forma individual. Os resultados serão utilizados exclusivamente para fins de investigação e poderão ser publicados em revistas científicas. Não será mencionada a sua verdadeira identidade em qualquer circunstância.

Obrigada pela sua atenção,

Isabel Teixeira Fernandes

Estudante do Mestrado em Fisioterapia em Condições Músculo-Esqueléticas lecionado pela ESS-IPS, em parceria com a NMS/FCM e a ENSP-UNL

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Appendix B. Consent form – Physiotherapists

Declaração de Consentimento Informado - Fisioterapeutas

Título do Estudo: How Portuguese novice physiotherapists practice therapeutic education? A video elicitation interview study in musculoskeletal private practice

Título do Estudo (em português): Como é que os fisioterapeutas recém-licenciados portugueses praticam a educação terapêutica? Um estudo de entrevistas de elicitação de vídeo em prática privada músculo-esquelética

Instituição/Unidade Orgânica: Instituto Politécnico de Setúbal- Escola Superior de Saúde

Investigador Principal/Responsável pelo Estudo: Fisioterapeuta Isabel Fernandes

Orientadores Científicos: Professora Doutora Carmen Caeiro e Professora Doutora Roma Forbes

* **Obrigatória**

Este estudo enquadra-se na Unidade Curricular de Relatório de Investigação do 2º ano do Mestrado em Fisioterapia em Condições Músculo-Esqueléticas lecionado pela Escola Superior de Saúde do Instituto Politécnico de Setúbal (ESS-IPS), em parceria com a *NOVA Medical School*/ Faculdade de Ciências Médicas (NMS/FCM) e a Escola Nacional de Saúde Pública da Universidade Nova de Lisboa (ENSP-UNL). *

Selecione 4 opções.

☐ Li e compreendi a ficha informativa. Foram-me explicados os objetivos e procedimentos envolvidos no estudo. As minhas questões foram esclarecidas de forma satisfatória.

☐ Compreendi que a minha participação é voluntária e que sou livre de

abandonar o estudo a qualquer momento, sem qualquer consequência, prejuízo e sem necessidade de justificação, podendo, se assim o entender, enviar um e-mail à investigadora responsável.

☐ Compreendi que os dados recolhidos serão utilizados apenas para fins de investigação. Compreendi também que a informação referente à minha identificação pessoal será mantida anónima e confidencial, sendo armazenada em local seguro e apenas manuseada pelos investigadores deste estudo.

☐ Declaro que aceito participar no estudo sobre os modelos da prática de educação terapêutica dos Fisioterapeutas Portugueses Recém-Licenciados.

Nome do participante *

Nome do Investigador Responsável: Isabel Teixeira Fernandes (220512005@estudantes.ips.pt)

Data *

Nota: Após confirmação de consentimento informado recomenda-se impressão de cópia em formato pdf, que ficará em sua posse. Para este efeito poderá usar a opção de impressão, disponível nos *browsers* mais comummente utilizados, constituindo esta uma alternativa ao duplicado usado em formato de papel. Se necessitar de ajuda poderá contactar a investigadora responsável, Isabel Teixeira Fernandes (220512005@estudantes.ips.pt).

Appendix C. Study explanatory letter – Patients

Carta Explicativa do Estudo - Utentes

Título do Estudo: How Portuguese novice physiotherapists practice therapeutic education? A video elicitation interview study in musculoskeletal private practice

Título do Estudo (em português): Como é que os fisioterapeutas recém-licenciados portugueses praticam a educação terapêutica? Um estudo de entrevistas de elicitação de vídeo em prática privada músculo-esquelética

Caro(a) Utente,

O meu nome é Isabel Teixeira Fernandes, sou Fisioterapeuta e estudante do 2º ano do Mestrado em Fisioterapia em Condições Músculo-Esqueléticas, lecionado pela Escola Superior de Saúde do Instituto Politécnico de Setúbal (ESS-IPS), em parceria com a *Nova Medical School*/ Faculdade de Ciências Médicas (NMS/ FCM) e com a Escola Nacional de Saúde Pública da Universidade Nova de Lisboa (ENSP-UNL). De momento, encontro-me a conduzir um estudo intitulado "*How Portuguese novice physiotherapists practice therapeutic education? A video elicitation interview study in musculoskeletal private practice*" desenvolvido no âmbito da minha dissertação de mestrado. Este estudo conta com a orientação da Professora Doutora Carmen Caeiro e coorientação da Professora Doutora Roma Forbes.

Gostaríamos de convidá-lo(a) a participar neste estudo. Antes de tomar qualquer decisão, é importante que compreenda as razões pelas quais este estudo está a ser conduzido e o nível de envolvimento que lhe é pedido. Por favor, utilize o tempo que necessitar para ler a informação que se segue. Poderá falar com outras pessoas sobre este estudo e com o seu fisioterapeuta, se o desejar. Se algum aspeto não for claro ou se desejar mais informação por favor não hesite em colocar-nos as suas questões. Utilize o tempo que necessitar para decidir se deseja ou não participar neste estudo.

Parte 1 – O propósito do estudo e o nível de envolvimento necessário

Qual o propósito deste estudo?

O propósito deste estudo é caracterizar e compreender a prática de fisioterapeutas recém-licenciados portugueses no que diz respeito à utilização da modalidade de intervenção educação terapêutica no contexto da prática privada musculoesquelética. Mais especificamente, pretende-se explorar os modelos de relação terapêutica que sustentam esta prática.

Porque fui convidado(a)?

Foi convidada(o) para participar neste estudo por estar em tratamento por uma condição músculo-esquelética para qual é recomendada a modalidade de intervenção em estudo, em contexto de prática privada e com um(a) Fisioterapeuta recém-licenciado(a) (com 5 ou menos anos de prática profissional) que concluiu a sua licenciatura na Escola Superior de Saúde do Instituto Politécnico de Setúbal.

Tenho mesmo de participar?

A decisão de participar neste estudo é sua. Iremos descrever-lhe o estudo ao longo desta carta explicativa e terá o tempo que necessitar para ler e colocar questões. Apenas serão incluídas as pessoas que manifestarem o seu consentimento informado. É livre de desistir do estudo a qualquer momento, sem que tenha de o justificar, podendo contactar o(a) seu(ua) fisioterapeuta ou a investigadora principal através do e-mail disponibilizado no final deste documento, informando da desistência da participação.

O que acontece se aceitar participar?

Após manifestação do seu consentimento será informado, pelo seu(ua) fisioterapeuta do dia em que será realizada a gravação de uma das suas sessões de fisioterapia. Não se espera que esta gravação tenha impacto no seu plano de tratamento. Este vídeo será enviado pelo(a) seu(ua) fisioterapeuta para a investigadora responsável e transferido para uma pasta protegida por uma palavra-passe no computador da mesma.

Após este primeiro procedimento o(a) seu(ua) fisioterapeuta será convidado(a) a realizar uma entrevista individual, na qual recordaremos o vídeo e farei algumas

questões para entender melhor a sua prática e razões associadas com esta, considerando o tema da educação do utente. O vídeo será utilizado exclusivamente para orientação das questões realizadas durante a entrevista e não será divulgado fora desse âmbito.

Quais são as possíveis vantagens de participar?

A sua participação neste estudo irá ajudar-nos na compreensão dos modelos da prática clínica de educação terapêutica em utentes com condições músculo-esqueléticas em contexto privado e motivos dessas práticas dos fisioterapeutas recém-licenciados portugueses. Não lhe podemos prometer que este estudo o (a) ajude de alguma forma. Contudo, podemos garantir-lhe que a informação que retiramos dele irá permitir uma reflexão acerca dos modelos de prática de educação terapêutica dos fisioterapeutas portugueses recém-licenciados e das suas dificuldades, podendo contribuir para refletir sobre os programas curriculares do curso de Licenciatura em Fisioterapia em Portugal, principalmente no que diz respeito ao desenvolvimento de competências para a utilização da educação terapêutica enquanto modalidade de intervenção.

Quais são as possíveis desvantagens de participar?

Os procedimentos descritos para a realização deste estudo não apresentam riscos associados, pelo que, não são esperadas quaisquer implicações negativas para os participantes deste estudo.

E se houver algum problema?

Se desejar obter informação adicional sobre qualquer aspeto deste estudo, poderá contactar a investigadora responsável: Isabel Teixeira Fernandes, através do endereço 220512005@estudantes.ips.pt ou a orientadora científica do estudo: Professora Doutora Carmen Caeiro, através do endereço carmen.caeiro@ess.ips.pt.

Se desejar fazer uma reclamação poderá contactar a Comissão de Ética do Instituto Politécnico de Setúbal, através do endereço comissao.etica@ips.pt.

A minha participação neste estudo será confidencial e anónima?

Sim. Toda a informação que fornecer sobre si durante a gravação da sessão de tratamento será mantida em estrita confidencialidade dentro da equipa de investigação. O seu nome não será mencionado em nenhum momento e a sua informação pessoal não será compartilhada para fins deste estudo. Os vídeos recolhidos serão armazenados numa pasta protegida por palavra-passe no computador pessoal da investigadora principal e destruídos após 3 anos.

O que irá acontecer às informações que eu der sobre mim?

As informações que transmitir durante a sessão de tratamento gravada em formato áudio serão apenas visualizadas pela equipa de investigação. As gravações serão preservadas por um período máximo de 3 anos após o término do estudo.

O que irá acontecer com os resultados deste estudo?

Os resultados do estudo apresentados em contexto de apresentação do Relatório de Investigação do Mestrado em Fisioterapia em Condições Músculo-Esqueléticas, nunca sendo os participantes identificados de forma individual. Os resultados serão utilizados exclusivamente para fins de investigação e poderão ser publicados em revistas científicas. Não será mencionada a sua verdadeira identidade em qualquer circunstância.

Obrigada pela sua atenção,

Isabel Teixeira Fernandes

Estudante do Mestrado em Fisioterapia em Condições Músculo-Esqueléticas lecionado pela ESS-IPS, em parceria com a NMS/FCM e a ENSP-UNL

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Professora Adjunta no Departamento de Fisioterapia da ESS-IPS

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E-mail: r.forbes2@uq.edu.au

Appendix D. Consent form – Patients

Declaração de Consentimento Informado - Utentes

Título do Estudo: How Portuguese novice physiotherapists practice therapeutic education? A video elicitation interview study in musculoskeletal private practice

Título do Estudo (em português): Como é que os fisioterapeutas recém-licenciados portugueses praticam a educação terapêutica? Um estudo de entrevistas de elicitação de vídeo em prática privada músculo-esquelética

Instituição/Unidade Orgânica: Instituto Politécnico de Setúbal- Escola Superior de Saúde

Investigador Principal/Responsável pelo Estudo: Fisioterapeuta Isabel Fernandes

Orientadores Científicos: Professora Doutora Carmen Caeiro e Professora Doutora Roma Forbes

*** Obrigatória**

Este estudo enquadra-se na Unidade Curricular de Relatório de Investigação do 2º ano do Mestrado em Fisioterapia em Condições Músculo-Esqueléticas lecionado pela Escola Superior de Saúde do Instituto Politécnico de Setúbal (ESS-IPS), em parceria com a *NOVA Medical School*/ Faculdade de Ciências Médicas (NMS/FCM) e a Escola Nacional de Saúde Pública da Universidade Nova de Lisboa (ENSP-UNL). *

Selecione 4 opções.

☐ Li e compreendi a ficha informativa. Foram-me explicados os objetivos e procedimentos envolvidos no estudo. As minhas questões foram esclarecidas de forma satisfatória.

☐ Compreendi que a minha participação é voluntária e que sou livre de abandonar o estudo a qualquer momento, sem qualquer consequência, prejuízo e

sem necessidade de justificação, podendo, se assim o entender, falar com o(a) seu(ua) fisioterapeuta ou a investigadora principal. Esta decisão não terá qualquer impacto no meu tratamento.

Compreendi que os dados recolhidos serão utilizados apenas para fins de investigação. Compreendi também que não será recolhida informação referente à minha identificação pessoal e que todos os dados recolhidos serão preservados de forma anónima e confidencial, armazenados em local seguro e manuseados apenas pelos investigadores deste estudo.

Declaro que aceito participar no estudo sobre os modelos da prática de educação terapêutica dos Fisioterapeutas Portugueses Recém-Licenciados.

Nome do participante *

Nome do Investigador Responsável: Isabel Teixeira Fernandes (220512005@estudantes.ips.pt)

Data *

Nota: Após confirmação de consentimento informado recomenda-se impressão de cópia em formato pdf, que ficará em sua posse. Para este efeito poderá usar a opção de impressão, disponível nos *browsers* mais comummente utilizados, constituindo esta uma alternativa ao duplicado usado em formato de papel. Se necessitar de ajuda poderá contactar a investigadora responsável, Isabel Teixeira Fernandes (220512005@estudantes.ips.pt).

Appendix E. Observation guide

Types	Subtypes	Time and length of observation	Behaviour observed	Specific questions to be integrated into the interview schedule
1. Activity-Passivity Unidirectional transmission of knowledge regardless of what the patient knows or wants to know.	**1.1. Biomedical Information** The physiotherapist displays knowledge or listed behaviours to be adopted but does not systematically include the rationale. Information limited to physical health			
	1.2. Instruction aimed at learning actions or understanding mechanisms The physiotherapist transmits knowledge to help the patient learn an action or understand a mechanism.			
	1.3. Start of personalisation, life context considered The physiotherapist uses aspects of the patient's life context and lifestyle			

	to communicate knowledge.			
2. Guidance-Cooperation Communicates knowledge using information provided by the patient at the request of the HCP.	**2.1. Transmission disregarding representations** Rationales for health behaviour are set out, but the physiotherapist communicates knowledge in the way he/she likes to learn.			
	2.2. Representations explored, subject to possible correction Representations are collected but are confronted with scientific facts in order to be "corrected".			
3. Mutual particiation Positions the patient as a partner. Motivation work.	**3.1. Coaching based on pre-existing motivation** Methods are "predefined" by the physiotherapist. Pre-existing motivation could be assessed to estimate whether the conditions were in place to optimise the education success rate. Negotiation can be applied as long as the vital prognosis is not engaged. Metaphors			

	tailored to the patient can be used.			
	3.2. Life-project-based learning The physiotherapist assists the patient to gradually gain autonomy including in making health choices. The physiotherapist helps the patient's "life project/goals" to emerge through interrogative methods. Education based on the life project. Motivation stimulated in this way. Knowledge and know-how transmission are not a priority unless the patient asks for it. Representations can be deconstructed by encouraging the patient to adopt dissonant behaviour.			
	3.3. Trust-based relationship The prior health problem is the one the patient considers as such. His/her reading grid of a phenomenon is accepted as "true". The physiotherapist tries to			

	get to the root of the problem by questioning. Health behaviour goals and possible learnings were “co-decided” in light of what is possible for, and desired by, the patient.			
4. Autonomism Accompanies. Let the patient "decide".				

Appendix F. Semi-structured interview schedule

Tópicos enquadradores:

1. Boas-vindas e agradecer o envio do vídeo e a disponibilidade;
2. Apresentação da investigadora responsável pela entrevista;
3. Reforço dos aspetos mencionados na carta explicativa do estudo e consentimento informado;
4. Enquadramento em relação à educação, enquanto modalidade terapêutica no tratamento de utentes com condições músculo-esqueléticas, apresentando os modelos que estiveram na base das observações;
5. Apresentação dos procedimentos a adotar durante a entrevista – observação de excertos do vídeo e apresentação de questões com o objetivo de compreender de forma aprofundada a prática clínica, no que diz respeito à educação ao utente;

Questões de caracterização do Fisioterapeuta:

- Idade;
- Há quanto tempo terminou o curso;
- Caracterização do contexto de trabalho.

Questões baseadas na visualização do vídeo:

1. De que forma é que esta sessão de tratamento foi semelhante ou diferente de uma sessão de tratamento típica que realizas com utentes com esta condição clínica?

    - Se esta não é uma sessão típica, o que é que a tornou diferente?
    - Que aspetos, se existem, são comuns ao tratamento que realizas com todas as pessoas com esta condição clínica?
    - Como descreverias o teu processo de raciocínio clínico? Ou seja, podes dizer-me passo a passo como chegaste a esta estratégia de

educação? Como é que evoluíram os teus processos de pensamento?

2. Qual consideras ser o teu papel enquanto fisioterapeuta nas sessões de educação com este utente?

- Quando pensas nas sessões de educação, como é que te descreverias enquanto fisioterapeuta?
- O que é que achas que foi importante fazer/dizer a este utente, pensando na educação?
- O que achas que o utente necessita/espera de ti?
- Durante a sessão, o que é que tentas que os utentes adquiram?
- Porque é que achas que a educação é importante?

3. Quais foram as principais dificuldades, se existiram, que sentiste ao nível da educação nesta sessão?

- Consideras que existem elementos neste utente que influenciaram a forma como praticaste a educação?
- Consideras que existem elementos no teu desempenho que influenciam a forma como praticas a educação?

4. Que aspetos, se existiram, na tua opinião facilitaram a educação/ sessão educativa deste utente?

- Consideras que existem elementos neste utente que influenciaram a forma como praticaste a educação...
- Consideras que existem elementos no teu desempenho que influenciam a forma como praticas a educação...

5. De que forma consideras que a relação terapêutica estabelecida com esta utente teve impacto/influenciou a sessão de educação?

- Que elementos consideras importantes na relação terapêutica?
- Que imagem tinhas deste utente?

6. Agora focando no vídeo, vamos ver este excerto do vídeo que vou passar...

7. Gostava de passar ao próximo segmento do vídeo.

8. Passando agora ao próximo segmento do vídeo...

9. No próximo segmento...

10. Agora passando ao último segmento do vídeo...

Questões para aprofundar conteúdos:

- Gostava que me descrevesses o propósito das tuas palavras neste segmento do vídeo
- O que é que neste utente te mostrou que esta intervenção seria efetiva?
- O que pretendias com este utente aqui? Que objetivos tinhas?
- Como é que soubeste que deverias tentar desta forma? Onde é que o aprendeste?
- Como é que o que estás a dizer neste segmento se compara ao que disseste no segmento anterior?
- Quando é que optas por... em vez de...?
- Disseste-me… poderias explorar mais detalhadamente?
- Há pouco falaste-me de… porque consideras tal importante?
- Poderias dar-me alguns exemplos?

Appendix G. Audit trail

Audit Trail

This audit trail provides a description of the procedures included included in the data the analysis process.

The following procedures were carried out for each participant, individually:

1. Observation of the video sent by the participant.
2. After the first observation, the video was observed several times to immerse oneself in the data, through observing, re-observing and listening to the recordings. Then the observation data was introduced and coded into a word document with 5 columns: the first column included the types of therapeutic relationship based on Roussel & Frenay (2023); the second column included the subtypes of therapeutic relationship with a small description based on the same authors; the third column included the time and length of the observation in order to facilitate later observation; the fourth column included the behaviour observed and the fifth column (that was filled on the next step) the specific questions to be integrated into the interview schedule. This document was the observation guide.

Types	Subtypes	Time and length of observation	Behaviour observed	Specific questions to be integrated into the interview schedule
1. Activity-Passivity Unidirectional transmission of knowledge regardless of what	**1.1. Biomedical Information** The physiotherapist displays knowledge or listed behaviours to be adopted but does not systematically include the			

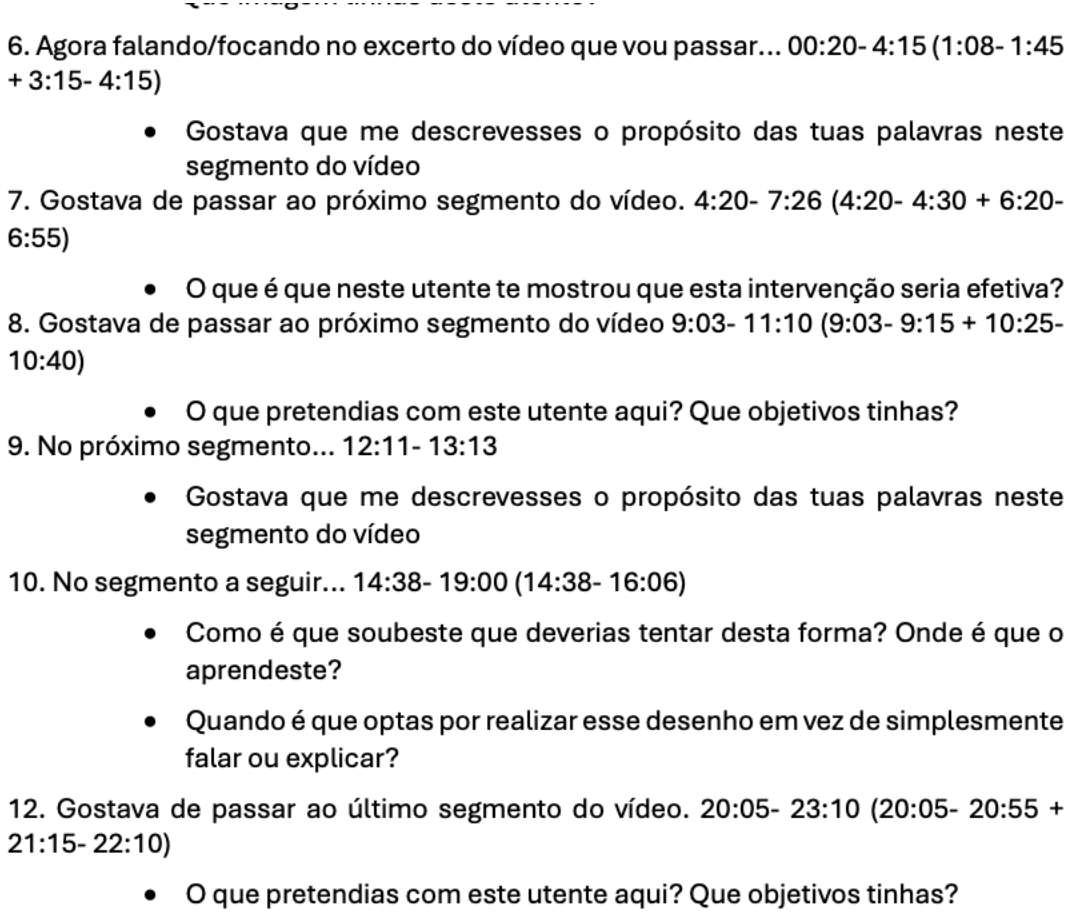
the patient knows or wants to know.	rationale. Information limited to physical health			
	1.2. Instruction aimed at learning actions or understanding mechanisms The physiotherapist transmits knowledge to help the patient learn an action or understand a mechanism.			
	1.3. Start of personalisation, life context considered The physiotherapist uses aspects of the patient's life context and lifestyle to communicate knowledge.	20:05-23:10 (20:05- 20:55 + 21:15- 22:10)	FT explica que a artrose da anca "tem picos" e que "a pessoa não identifica nenhum fenómeno que leve àquela dor" e que "deve-se a alterações do nosso sistema neurofisiológico e estas alterações por desregulação (...)". Explica ainda o "sistema de alarme".	O que pretendias com este utente aqui? Que objetivos tinhas?
2. Guidance-Cooperation Communicates knowledge using information provided by the patient at the request of the HCP.	**2.1. Transmission disregarding representations** Rationales for health behaviour are set out, but the physiotherapist communicates knowledge in the way he/she likes to learn.			
	2.2. Representations explored, subject to possible correction	A) 00:20-4:15 (1:08- 1:45 + 3:15- 4:15)	A) O FT pergunta à utente sobre a sua ida ao médico, ao que ela responde que lhe foi dito "para fazer uns	A) Gostava que me descrevesses o propósito

	Representations are collected but are confronted with scientific facts in order to be "corrected".	B) 4:20-7:26 (4:20- 4:30+ 6:20- 6:55)	exercícios com as pernas (...) e possivelmente seria um desgaste da cabeça do fémur". O FT questiona o que a utente "acha que acontece para ter dor, porque é que (...) tem dor nuns momentos e não tem dor noutros". A utente afirma que não sabe explicar isso. FT explica o que é a artrose, incluindo ainda a importância de a utente "gerir a sua própria condição". B) FT salienta a importância de perceber ao longo do dia o comportamento da dor da utente e o que esta faz diariamente. Pergunta ainda se a utente considera que o exercício ajuda ou não, a sua opinião. A utente afirma que "ajuda muito". E o FT explica que isso "faz sentido" e explica o porquê. Explica ainda os benefícios da atividade física, além dos benefícios na anca.	das tuas palavras neste segmento do vídeo B) O que é que neste utente te mostrou que esta intervenção seria efetiva?

Figure 1 - Excerpt from observation guide _ Lourenço's video

3. Selection of specific questions from the observation guide. Selection of the moments from video that would be explored in the interviews.

4. Plan the interview schedule according to the video observed and the notes taken in the observation guide. There was a semi-structured interview schedule that was altered according to observations.



6. Agora falando/focando no excerto do vídeo que vou passar... 00:20- 4:15 (1:08- 1:45 + 3:15- 4:15)

- Gostava que me descrevesses o propósito das tuas palavras neste segmento do vídeo

7. Gostava de passar ao próximo segmento do vídeo. 4:20- 7:26 (4:20- 4:30 + 6:20- 6:55)

- O que é que neste utente te mostrou que esta intervenção seria efetiva?

8. Gostava de passar ao próximo segmento do vídeo 9:03- 11:10 (9:03- 9:15 + 10:25- 10:40)

- O que pretendias com este utente aqui? Que objetivos tinhas?

9. No próximo segmento... 12:11- 13:13

- Gostava que me descrevesses o propósito das tuas palavras neste segmento do vídeo

10. No segmento a seguir... 14:38- 19:00 (14:38- 16:06)

- Como é que soubeste que deverias tentar desta forma? Onde é que o aprendeste?
- Quando é que optas por realizar esse desenho em vez de simplesmente falar ou explicar?

12. Gostava de passar ao último segmento do vídeo. 20:05- 23:10 (20:05- 20:55 + 21:15- 22:10)

- O que pretendias com este utente aqui? Que objetivos tinhas?

Figure 2 - Excerpt from interview schedule _ Lourenço's interview

5. Transcription of the interview that started with the software Microsoft Teams; names were replaced by pseudonyms and transcription errors were corrected.
6. After the transcription, the transcript was read several times to immerse oneself in the data, through reading, re-reading and listening to the recordings.
7. After the readings, colours were assigned to each type and subtype of therapeutic relationship. Then transcripts were re-read and excerpts were coded with colours that corresponded to the subtype assigned.

Types	Subtypes
1. Activity-Passivity	1.1. Biomedical Information
	1.2. Instruction aimed at learning actions or understanding mechanisms
	1.3. Start of personalization, life context considered
2. Guidance-Cooperation	2.1. Transmission disregarding representations
	2.2. Representations explored, subject to possible correction
3. Mutual particiation	3.1. Coaching based on pre-existing motivation
	3.2. Life-project-based learning
	3.3. Trust-based relationship
4. Autonomism	

Figure 3 - Colour code for types and subtypes

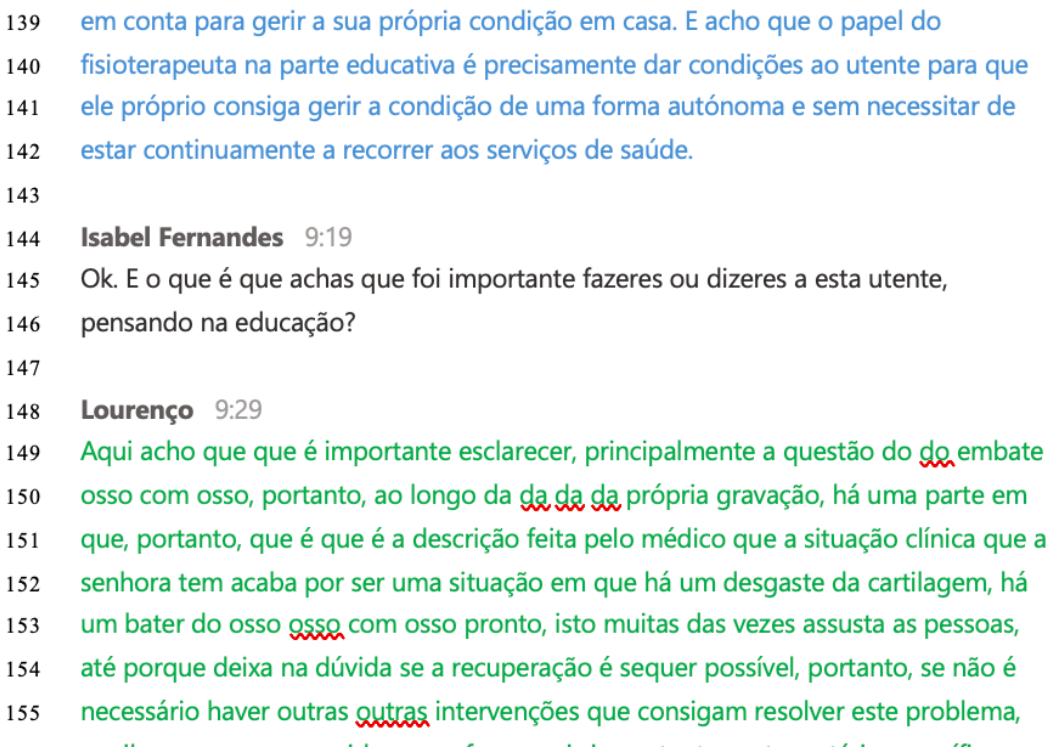


Figure 4 - Excerpt from colour coded interview schedule _ Lourenço's interview

8. A final coding was completed taking into consideration the codes assigned to the interaction in the recorded video and the discussion among researchers.

9. Selected excerpts coded were gathered into a table in a word document with 4 columns: first column included the types of therapeutic relationship; second column included the subtypes of therapeutic relationship with a small description; the third column included the excerpts selected, the interviewee and the lines of the excerpt selected; the fourth column included the notes of when that excerpt occurred.

Tipos	Subtipos	Excertos	Notas
1. Atividade-Passividade Transmissão unidirecional de conhecimento, independentemente do que o paciente sabe ou quer saber.	**1.1. Informação Biomédica** O fisioterapeuta exibe conhecimentos ou comportamentos aconselhados a serem adotados, mas não inclui sistematicamente a justificativa. Informações limitadas à saúde física.	"aliviar a nível das tensões musculares, alongar os músculos, mais a cadeia posterior deixar a articulação mobilizar também, dar um bocadinho mais de mobilidade, promover ali a produção do sinovial. Ehh fortalecer também depois fiz um exercício para fortalecer e é claro dar funcionalidade para para o dia a dia, dar alguns conselhos." Catarina, 348-352	Quando pergunto à entrevistada quais os seus principais objetivos num determinado momento da sessão essa foi a resposta.
	1.2. Instrução destinada a aprender ações ou compreender mecanismos O fisioterapeuta transmite conhecimento para ajudar o paciente a aprender uma ação ou entender um mecanismo.	"no fim, costumo dar alguns exercícios, dar alguns conselhos para que a pessoa consiga lidar melhor com a sua condição. Mas sim costumo utilizar sempre este método normalmente." Catarina, 59-61 "Ou seja, o meu papel como fisio é primeiro a pessoa perceber melhor quais são, qual é a sua condição física, porque é que porque é que surgiu aquilo, explicar um bocadinho para a pessoa perceber também a nível das	Quando perguntado se aquela foi uma sessão de tratamento típica que realiza com utentes com a condição clínica apresentada, a resposta foi essa. Quando perguntei qual considera ser o seu papel como fisioterapeuta, a resposta foi a seguinte.

Figure 5 - Excerpt from word document with excerpts selected and notes

10. Insertion of coding in MAXQDA 2024 software to facilitate comparing codes and code statistics. Types and subtypes can be found in the bottom as “Códigos”.

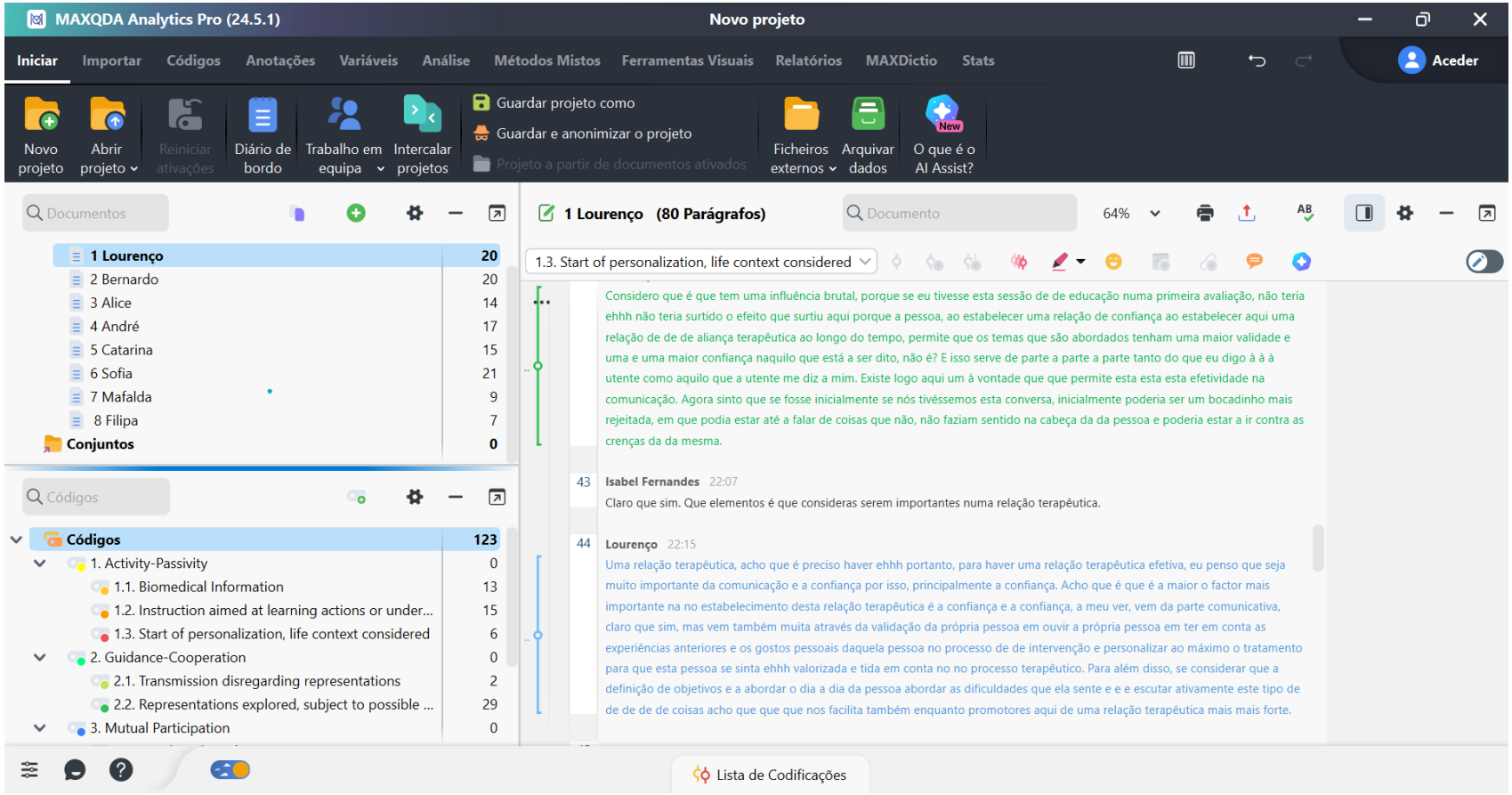


Figure 6 - Print screen from MAXQDA _ Lourenço's interview

Figure 7 - Document portrait generated by MAXQDA _ Lourenço's interview. The colours correspond to the points in the transcript assigned to each subtype

11. In order to complete the “member check” two documents were sent to participants: their respective interviews transcribed verbatim, and their respective portraits generated by MAXQDA (Figure 7).

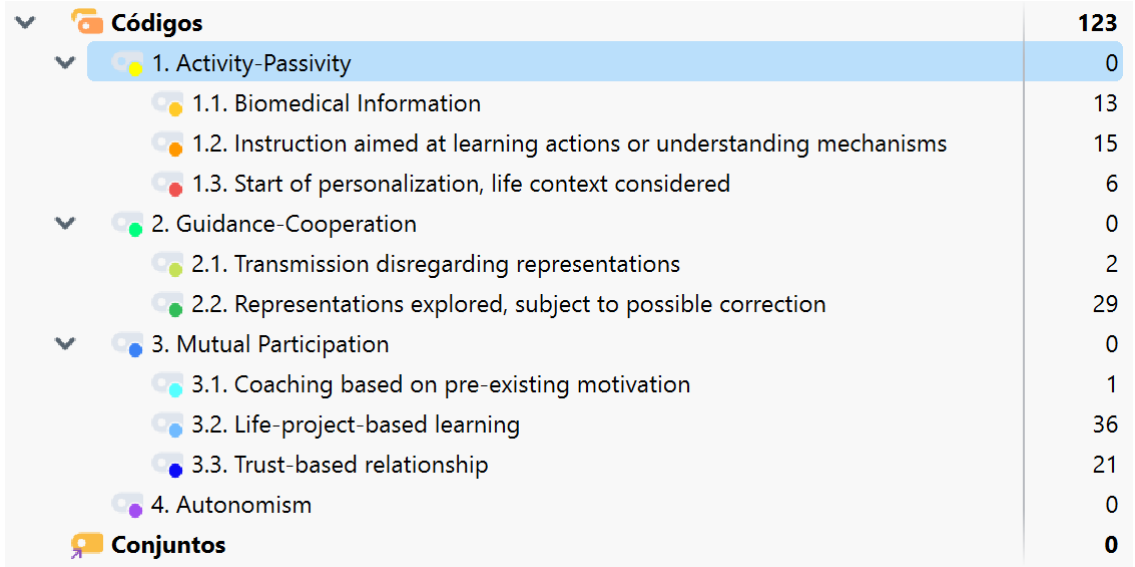


Figure 8 - Coding list MAXQDA 24

12. Writing of the final report.

Annexes

Annex 1. Ethics committee approval

POLITÉCNICO SETÚBAL

Comissão de Ética

Identificação do documento: CE-IPS nº PI 99-03-2024

Título do projeto: How Portuguese novice physiotherapists practice therapeutic education? A video elicitation interview study in musculoskeletal private practice (Como é que os fisioterapeutas recém-licenciados portugueses praticam a educação terapêutica? Um estudo de entrevistas de elicitação de vídeo em prática privada músculo-esquelética)

Investigador principal: Isabel Teixeira Fernandes
Equipa de investigação:
Orientadora: Carmen Caeiro (carmen.caeiro@ess.ips.pt)
CV: https://www.cienciavitae.pt/pt/F310-8179-27BA
Co-orientadora: Roma Forbes (r.forbes2@uq.edu.au)
CV: https://researchers.uq.edu.au/researcher/16059

Unidade Orgânica do IPS: Escola Superior de Saúde

Outras Unidades/Participantes:
NOVA Medical School/ Faculdade de Ciências Médicas (NMS/FCM) e Escola Nacional de Saúde Pública da Universidade Nova de Lisboa (ENSP-UNL).

ANÁLISE E JUSTIFICAÇÃO DO PARECER

Documentos recebidos

Foram recebidos os seguintes documentos:

- Pedido de apreciação de projeto dirigido à Presidente da CE-IPS
- Protocolo do estudo
- Instrumentos de colheita de dados
- Informação aos participantes
- Formulário de consentimento informado
- Declaração de não existência de conflito de interesses
- Compromisso de boas práticas
- Curriculum vitae sintético do IR e membros da equipa
- Parecer do Encarregado de Proteção de dados

Análise e justificação do Parecer

1. O estudo é proposto pela estudante *Isabel Teixeira Fernandes* da Escola Superior de Saúde do IPS, no âmbito Mestrado em Fisioterapia em Condições Músculo-Esqueléticas, como investigadora principal. Apresenta como orientadora científica a Professora Carmen Caeiro, da Escola Superior de Saúde do IPS e como co-orientadora científica, a Professora Roma Forbes, da The University of Queensland. É apresentado o Curriculum Vitae (CV) da investigadora principal e o link para os CV da orientadora e da co-orientadora (links funcionantes).
2. O estudo tem como objetivos caracterizar e compreender a prática de fisioterapeutas recém-licenciados portugueses no que diz respeito à utilização da modalidade de intervenção educação terapêutica no contexto

da prática privada musculoesquelética. Mais especificamente, pretende-se explorar os modelos de relação terapêutica que sustentam esta prática.

3. Metodologicamente, o estudo apresenta um design qualitativo através abordagem observacional de gravações de vídeo da interação entre o paciente e fisioterapeuta no que concerne à educação de patentes numa sessão de fisioterapia, bem como entrevistas de elicitação.
4. Em relação aos participantes, o recrutamento está descrito de forma clara: fisioterapeutas recém-licenciados até aos 5 anos de prática profissional que tenham completado a sua formação de 4 anos em Portugal e que trabalhem no setor privado e que trabalhem a condição músculo-esquelética..
5. São apresentados de forma clara os critérios de exclusão do estudo.
6. A recolha de dados, será feita através de observação não participante (sendo gravado um vídeo com a intervenção do fisioterapeuta junto do paciente numa sessão de fisioterapia) e de entrevista semi-estruturada e claramente explicada toda a intervenção.
7. O procedimento de análise dos dados é claro e objetivo e refere todo o processo de forma clara (é apresentado o Guia da entrevista em apêndice e feita alusão à sua transcrição; é explicada a utilização de gravação em vídeo do trabalho de cada participante no estudo e também é claro que o vídeo será apagado no máximo 5 dias após a partilha, assim como está claro que só a equipa de investigação tem acesso às imagens gravadas, para além do uso de pseudónimo para manutenção de confidencialidade. Os dados serão guardados em pasta com password e destruídos três anos após a recolha.
8. Nas cartas explicativas/ convite (uma para o fisioterapeuta e outra para o paciente a quem é feita a sessão de fisisoterapia) é feita referência à instituição que aprova cientificamente o estudo, o investigador principal, a orientadora e a co-orientadora, o objetivo e título do estudo. É garantida confidencialidade dos dados e participação voluntária, com a possibilidade de desistir de participar no estudo, sem ter de explicitar as razões para tal. O participante é também informado de que a sua participação no estudo não acarreta quaisquer vantagens ou contrapartidas, e que não são esperadas quaisquer implicações negativas para os participantes.
9. O formulário de consentimento informado é igual para o fisioterapeuta e para o utente, apresenta informação enquadradora do estudo, nomeadamente o título e instituição que o aprova cientificamente, bem como os membros da equipa de investigação. Apresenta também informação sobre a participação voluntária no estudo, garantia de anonimato e de armazenamento seguro dos dados (confidencialidade, explicita a compreensão das informações constantes na carta explicativa, apresenta espaço para escrever o nome do participante, o nome investigador principal e tem um link (funcionante) para ser preenchido pelo participante.
10. O Parecer do Encarregado de Proteção dos Dados é favorável.
11. O cronograma do estudo é adequado.
12. Nas declarações de ausência de conflito de interesses e incompatibilidades, é claramente identificada a investigadora responsável.
13. Os termos de responsabilidade estão assinados pela estudante e pela orientadora (digitalmente).
14. Nas datas de assinatura, na página 14, sugere-se que, futuramente seja adotada a data de formato português (dia/mês/ano) ou no formato internacional (ano/mês/dia), para não haver possível confusão.

Parecer

Em conclusão, a CE-IPS considera que o projeto cumpre requisitos éticos da investigação com seres humanos e apresenta garantias de respeito pelos direitos dos participantes, pelo que emite parecer favorável à realização do estudo, nos termos ora apreciados.

Aprovado a 31 de março 2024

Presidente da CE-IPS

Assinado por: **Lucília Rosa Mateus Nunes**
Num. de Identificação: 06064421
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